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# The Auk

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# THE AUK:

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## A WADING-BIRD ROOKERY.

BY BAYARD H. CHRISTY.

AT the end of Florida, where the Everglades run out to the mangrove-fringed coast, a shallow lake spreads a mile of open water. Mangroves have rimmed it about with promontories and islands of verdure, scattered cypresses rise behind, and there are intervals through which the eye ranges away to the horizon. By hidden creeks the gentle tides flow and ebb, and above high-water level on the digitated mangrove stems rests table-like a semblance of firm land. There various small creatures lurk,—raccoons, rabbits, an occasional bobcat or otter, and such few alligators as have eluded the wandering hunters. The birds which on the shore of this lake maintain their immemorial nesting-place, breed in mid-winter; for, under the tropic, winter is the salubrious season and the season when, no doubt, suitable food for the nestlings is most abundantly available. The two visits upon which these notes are based were made on February 24 and March 8, 1927.

From a distance no lake is to be seen,—an island, rather, or the semblance of one, in an ocean of saw-grass. Experience only gives assurance that where mangroves rise, there open water is to be found, washing their stems. Herons of various species, singly and in companies, move over the plain; Vultures and Ibises swing overhead; an occasional Hawk passes; but there is nothing in view to indicate, to the casual visitor at least, that within one mangrove cluster rather than another a bird nursery

of large extent is to be found; indeed, there is nothing to indicate the existence of such an establishment in the neighborhood.

The approach to the lake is along a drainage canal, and thence by a creek winding blindly through the marsh. Two of us in a canoe together followed the known course. As we advanced, we surprised Louisiana Herons hunting along the canal banks. Ducks sprang nimbly and Pelicans flapped heavily from the water before us. The silvery fins of tarpon gleamed from the surface. Overhead the numbers of sailing birds increased—Ibises, Pelicans, Water Turkeys—and suddenly the anticipation of many days was realized, when with swift, strong strokes three coral-pink birds came winging over the mangroves. No anticipation could surpass the startling beauty of these Spoonbills in the sky.

As we threaded our way through a screen of mangrove stems, Night Herons flapped and squawked in the tree-tops; a Water Turkey fell like a plumet and with muffled splash was gone. Presently we burst through into broad water. A raft of Ducks rose before us and like a waving carpet drifted away. Far out on the lake a few great White Pelicans were floating. And as we moved out from shore a receding promontory brought the rookery to view. There, along the distant eastern margin, the mangroves were laden white, decked with birds as with an efflorescence. There was flash of distant moving wings, but from so great a distance no sound reached us.

As I think about it, I wish that we might have glided unseen into that city of the birds; for we had no thought to harm them, nor had they need to fear us. There was, however, nothing for it but to come visibly and terrifyingly among them. We skirted the lake and approached as quietly as we could. But as we came into the midst of the city all was clamor and confusion. Such flapping and croaking and squawking! such scrambling and tumbling! We paddled about, noting with wondering eyes the splendid Herons in their nesting-time plumes, the curious nestlings, —the younger ones fearless still and quiet; those of larger growth tumultuously clambering away, and though unable to fly, astonishingly acrobatic among the branches. Presently we found a cove and drew under cover, and then after a time the wild excitement passed and the birds returned stealthily to their usual pursuits.

Along this, the eastern side of the lake there are detached mangrove growths, two or three small elongate islets strung along the shore. Their total length may be four hundred yards, and their breadth fifty, their area a few acres. Upon these, isolated and secure, the city is built. It is compact together. It covers the islets, but not completely. There are unoccupied extremities, and the curious fact is that, while elsewhere the islets are most densely filled, these marginal areas are quite empty of nests.

The southern precinct of the city, comprising one islet and a good part of another, is occupied by Wood Ibises, the remaining northern portion by Herons of various kinds. The Ibis nests are built upon and surmount the trees, the Heron nests are placed in the forks of the branches and within the protection of the foliage; and because of this difference in the manner of building, the two parts of the city are unlike in appearance. It is the southern precinct covered with the nests of Ibises which bears the distant semblance of efflorescence. This Ibis precinct too has the appearance of being more densely populated. The nests are so closely crowded together that they seem to fill all the space,—continuous surfaces of birds. Even among the Ibis nests, however, we found a few nests of Louisiana and of Night Herons, and a few of Cormorants and of Water Turkeys. As we paddled near, the parent birds rose in the air, and the young Ibises turned and ran pell-mell toward the summits of their hills of foliage, flapping, crowding, treading one upon another, in a wild and raucous scramble. The little Cormorants beat no such retreat, but standing on their nests, vomited unpleasantly.

The Herons, to the northward, are segregated somewhat according to kind and occupy successive levels. It is the Louisiana Herons chiefly that live in the lowest stories. Their nests rest in every available crotch; indeed, we found one of them beautifully fashioned and resting in the boots of a cabbage palmetto which had grown among the mangroves. Standing in our canoe we could look down into many of these Louisiana Heron nests, and could see in some the elongate clear blue eggs. Higher in the arboreal tenements lived the Night Herons and the Snowy Egrets, and in the airy upper chambers, thirty feet above, the great American Egrets, some scattering Wood Ibises, and the few Spoonbills had their residence.

It was a satisfaction and a reassurance to find the two species of Egrets present in substantial numbers. And elsewhere too in the Everglades we found these fine birds fairly abundant. We felt sure that the endeavor to protect them and to save them from utter destruction is having effect.

Of the Spoonbills' nests there were, we believe, four in all. At the time of our first visit we found two in immediate proximity, to one of which a brood of five belonged and to the other, four. One of the young remained still in its nest, and the others were perched near and immediately above. In addition, we found one or two isolated nests, but because of the confusion and the winding of the water ways we could not be sure whether we had seen two other nests or had seen but one and had seen it repeatedly. On our second visit, however, nearly all the young Spoonbills were in flight, and then counting two birds still flapping in the tree-tops and nineteen in the air, it seemed fairly sure that in all there were four families.

How great is the population of this city? We tried in bewilderment to say. A thousand? Yes, easily. Two thousand? Yes, and more. How many nesting pairs of Wood Ibises? Several hundred, certainly. At length we set the number down at three hundred, and as I review the matter I find myself saying at one time, Can there have been so many? and again, Yes, certainly there were. Here are the figures,—guesses, to be sure, but they will serve to give approximate indication, at least.

| | |
|---|---|
| Water Turkey (*Anhinga anhinga*) | 25 pairs |
| Florida Cormorant (*Phalacrocorax auritus floridanus*) | 50 " |
| Roseate Spoonbill (*Ajaia ajaja*) | 4 " |
| Wood Ibis (*Mycteria americana*) | 300 " |
| Egret (*Casmerodius egretta*) | 25 " |
| Snowy Egret (*Egretta c. candidissima*) | 100 " |
| Louisiana Heron (*Hydranassa tricolor ruficollis*) | 200 " |
| Little Blue Heron (*Florida c. caerulea*) | 50 " |
| Little Green Heron (*Butorides v. virescens*) | 25 " |
| Black-crowned Night Heron (*Nycticorax nycticorax naevius*) | 100 " |
| Total | 879 pairs |

In addition to the householders, there were transients and lodgers in this city. A dozen or more White Ibises were flying

about, and a pack of a hundred Brown Pelicans was roosting in a neighborly way in those portions of the islets unoccupied by nests and mentioned above. We could not perceive that either of these species was nesting in the rookery. There were a few Crows about, and many Turkey Vultures. Here and there we saw a Vulture perched near the nests. The Crows were marauders, the Vultures the mortuary police of the city,—parasitic species, to be sure, but still constituting with the nesting birds a biological entity, a piece of the web of life.

These many birds, Ibises, Cormorants, Spoonbills, are grotesque fellows in the picture books, each with an oddity of his own. But here in their environment nothing grotesque appeared. Each in his proper place was alert, vital, adequate. There was no excess, no disproportion. What splendid birds the Wood Ibises are!—not Ibises at all, but Storks in reality,—the only American Storks. And what mighty fliers! How steadily, vigorously, grandly they sail! excelling even the Vultures. One of them comes hurtling from the sky to perch in a tree-top. The long legs are lowered and spread apart,—serving as drag, as well as rudder; the neck too is lowered and as the bird reaches its perch the tip of the bill and the feet come almost together. But the great body floats easily and precisely to rest.

Of the Spoonbills it is impossible to withhold an enthusiastic word more. Sailing in the sunlight, from transluscent bill to toe, from wing tip to wing tip they are suffused with color. And such color! Flame birds! Birds of the dawn! Rosy pink, with wing and tail coverts of deepest carmine. The tail tawny orange. It is as though an orchid had spread its lovely wings and flown. The sight of this beautiful creature is an event, an experience; a thing to be carried in memory, with the sight of Fujiyama in the dawn, with an eclipse of the sun.

We moved away and the croaks and calls sunk to a murmur, as of a crowd of humans in the distance. We looked upward and there in the high heavens the Storks were sailing—dozens, hundreds of them, some near at hand, some at amazing and giddy heights, revealing unthought-of depths within the blue empyrean. Vultures too were sailing there and Anhingas and Pelicans, and now and again the band of Spoonbills swept in harrow formation across the field, equally beautiful against sky and cloud.

When we neared the exit from the lake we heard the disturbing sound of gunshots, and presently rounding a point we came on two boats, a ramshackle power boat with a skiff in tow. There was a loutish looking cracker at the wheel, and with him in the boats were five or six city men. Some of them had guns, and they seemed to have been firing at whatever came near. In their wake we picked up the poor body of a Pelican, shot down and left floating.

Not plume hunters, these,—American citizens, if you please, visiting the wilderness, full of the spirit of adventure, and gratifying a desire to kill. I do not pretend to understand them. I would not speak for them. I give them such credit or excuse as may be found in thoughtlessness. I can imagine, that if pressed, one of them might recklessly say, "We read of the pleasure which rich men find in shooting up Africa, why should not we on a scale within our reach do the like?" And here they were, advancing on one of those two or three rookeries where, as may be believed, the whole precious remnant of the Spoonbills of southern Florida is to be found.

The sudden encounter, the realization that there were those who might bear witness, a word of reminder that there was a law protecting the "pink curlew,"—these things were a restraint, and we heard no gunshot more. But a painful impression remained to mar a beautiful memory. For this year it may be supposed the Spoonbills are reasonably safe (unless, perhaps, they rear a second brood). The young now are fledged, and they will keep vigilantly beyond the range of guns. But there will be other nestings and there will be occasions when such lust to kill will meet no check.

Why these disquieting words? Why, after writing of pleasant things, conclude with a matter unpleasant to think about? For two reasons. First, for the sake of the birds. Twenty years ago the Audubon societies accomplished the cessation of the plume industry, and something has been said of the value of that accomplishment. But another danger remains. It existed from the beginning, but only now has it become imminent. It is a danger which is incident to advancing civilization, to the extension of automobile roads. The remotest regions have been pene-

trated, no refuge and fastness remains. The wrong behind the millinery business was an unnecessary and indubitable wrong. Exposure only was needed. It could not stand in the open. Brought to light, it became intolerable, and was done away. The wrong in the present situation is less obvious, and it is elusive. It is possible to gain some glimpse of it, and to urge that if the birds are to be saved, people must come to care enough and enough people must come to care. Then with destructive tendencies checked, remedial measures may be made effective.

The second reason concerns ourselves; for our own sakes we must save the birds. They are but a part, the most easily appealing part of that realm where, entering in, we find ourselves *in specie aeternitatis*. Care and fret have been left behind, the sting of sorrow is eased, and in the presence of the eternal we find a cure for life.

*Sewickley, Pa.*

# A STUDY OF THE SNOWY HERONS OF THE UNITED STATES.

BY ALFRED M. BAILEY.

*Plates XIII–XV.*

DURING the summer of 1925, Mr. J. D. Figgins and I spent a few weeks near the mouth of the Bear River, Utah, for the Colorado Museum of Natural History, collecting and photographing the birds nesting there so abundantly. The Snowy Herons seemed larger than specimens which we had taken on the Gulf coast of Louisiana, and on measuring them, we found that they answered well to the description of Brewster's Egret (*Egretta thula brewsteri*) described by Thayer and Bangs in the Proceedings of the New England Zoological Club, Vol. IV, pp. 37–41, from specimens taken at San Jose Island in the Gulf of California, about sixty miles north of La Paz, the difference between *Egretta thula thula* and *Egretta thula brewsteri* being entirely one of size.

A series of our Colorado and Utah birds was sent to Mr. Bangs for identification, and he replied as follows: "If the bird described as *Egretta candidissima brewsteri* is really any good, then your birds undoubtedly belong to it. Very unfortunately, we have one or two skins from Riverside, San Bernardino County, California, that are quite as light in the legs and feet as examples from South Carolina and Florida. I, since we described the form, have had my misgivings about it, because I consider that just the characters we used for it and by which it can only be told, are really very poor characters. Over and over again I have known of subspecies based on such differences, proving no good when very large series are brought together. It is wholly possible that the large size and very heavy feet and tarsi of the bird we call *brewsteri* are due only to old age. To be perfectly frank, I somehow now am rather inclined to doubt the distinctness of the form. There is a possibility, on the other hand, that all North American birds are larger and more heavily built than South American (the type locality of true *candidissima* is Carthagena, Colombia). For the

Photos by Alfred M. Bailey

SNOWY EGRETS AND NESTS, BEAR RIVER MARSHES, UTAH.

present, until someone disproves *brewsteri*, or calls all North American birds by that name, your skins must be referred to it, and its range extended to include the places whence yours came. There is no way out of that. Mr. Peters has been all over these conclusions, and all I say in this letter is agreed by him."

We then secured all the Snowy Herons available, and their measurements seem to demonstrate two points, first, that the birds of the Rocky Mountain region and westward average larger than birds from eastern United States, and second, that there is a great individual variation among birds of a given region. It will be seen by glancing at the measurements listed below that the tarsi of western birds undoubtedly average longer, with general measurements somewhat larger, than those of eastern birds. The tarsi of western males including those from Lower California, average over one hundred millimeters (107.3) in length, while in males from the eastern United States, they average well under one hundred millimeters (97.1). It will also be seen that there is less difference in the length of the tarsi of the females of the two regions, although those of the west are longer. Many birds from the east are as large as the average of the same sex from the west, but only one bird from the east approaches in size the largest from the west. The birds with long tarsi seem heavier built than others, even though the culmen and wings may be shorter.

The description of *brewsteri* is based on breeding birds, and the average of these specimens is much larger than that of a series from other parts of western United States, but it will be seen that there is little difference in size between fifteen other specimens here listed which were taken in Lower California near the type locality of *brewsteri*, and specimens taken in other western states.

The measurements of one hundred or more birds of any species are sure to result in a few interesting discoveries, and the more evidence presented, the less sure one is of the distinctness of any geographical race, for there are always exceptional specimens which are impossible to identify except according to locality. The last specimen I measured was the very large female in the Willett collection, which I collected in Louisiana on May 8, 1918, (i 2363). Louisiana Snowy Herons seem to average smaller than

other eastern birds, but this specimen has longer tarsi than any female I have handled; in fact, measurements show that its tarsi are one millimeter longer than the type specimen of *brewsteri*, a male (No. 11419). Its wings, however, are one millimeter shorter, and the culmen, thirteen millimeters. This specimen is so large that it suggests the possibility of error in determining the sex; it is a spring specimen, however, with the original field label, so there is little excuse for or likelihood of such a mistake.

In comparing the Herons of eastern and western United States, there seems to be no relation between the length of the tarsi, culmen, and wings, that is, a long-legged bird often has a short culmen or wing; or a specimen with short tarsi may have a long culmen, etc. My measurements show that there is little difference in the wings of the females of the two regions; again, the culmens of the males average approximately the same, so the only measurement of value seems to be the length of the tarsus.

The Snowy Herons are entirely white of plumage, and do not lend themselves to racial color variation, as in the Great Blue Heron, for instance, but it is possible that accurate field color notes on the soft parts would show some difference. Races based on size are not always satisfactory, and without added differences in color, would not always stand the test. Ward's Heron, for instance, is supposed to be larger than the Great Blue Heron. Two specimens collected in Louisiana from the same breeding colony, showed the total length of one to be one inch shorter than the minimum given for the Great Blue Heron; The other was one inch longer than the maximum for Ward's Heron.

A study of the average measurements of Snowy Herons from Lower California, western United States, and eastern United States shows that those from west of the Rocky Mountains are intermediate between the Lower California form and the eastern one, but that the males are much nearer the Lower California *brewsteri* than they are to *thula*, while the western females have practically the same sized culmen and wings, and are intermediate in the length of tarsi.

The averages are as follows:

| | Averages in millimeters | | |
|---|---|---|---|
| | Tarsus | Culmen | Wing |
| 10 Lower California Males | 109.6 | 93.7 | 279.6 |
| 17 Western Males | 105.8 | 84.8 | 271 |
| 43 Eastern Males | 97.1 | 83.3 | 259.9 |
| 14 Lower California Females | 100 | 87.5 | 264.9 |
| 14 Western Females | 94.7 | 80.7 | 250.6 |
| 35 Eastern Females | 89.6 | 78.6 | 251.2 |

This brings up the question of the degree of difference necessary to recognize a geographical race. The measurements listed herewith can leave little doubt that *brewsteri* can no longer be considered as an isolated subspecies inhabiting only Lower California, even though it averages larger than other western birds, for individual variation of birds from a given colony is very great, and one could hardly base a difference on an average of 3.8 millimeters which is the difference found in the length of the tarsi between males from Lower California and those from the western United States, (109.6, as against 105.8). Moreover the tarsi of a series of males taken along the Bear River range from 98 to 112 millimeters. The same argument could be used in comparing the birds of Utah with those from eastern North America, except that the extremes are greater. In the western males the range in length of tarsi is from 98 to 112 millimeters, and in the eastern, from 83 to 106 millimeters.

We have then the large *Egretta thula brewsteri* from a limited area in Lower California, and the much smaller *Egretta thula thula* from eastern North America, while in the vast territory west of the Rocky Mountains are found Snowy Egrets which are intermediate between the two, but seem nearer, in the length of tarsi, to the Lower California bird than to the eastern one. On the basis of measurements alone it is impossible to separate Lower California birds from other birds west of the Rockies, for their extremes are nearly identical.

Mr. Bangs has identified the Utah birds as being similar to his Lower California subspecies, and Arizona and California birds fall into the same category. He has suggested the possibility that the name *brewsteri* might be applied to all North American birds, with *Egretta thula thula* restricted to those of South America but there is no material available to work out the measurements

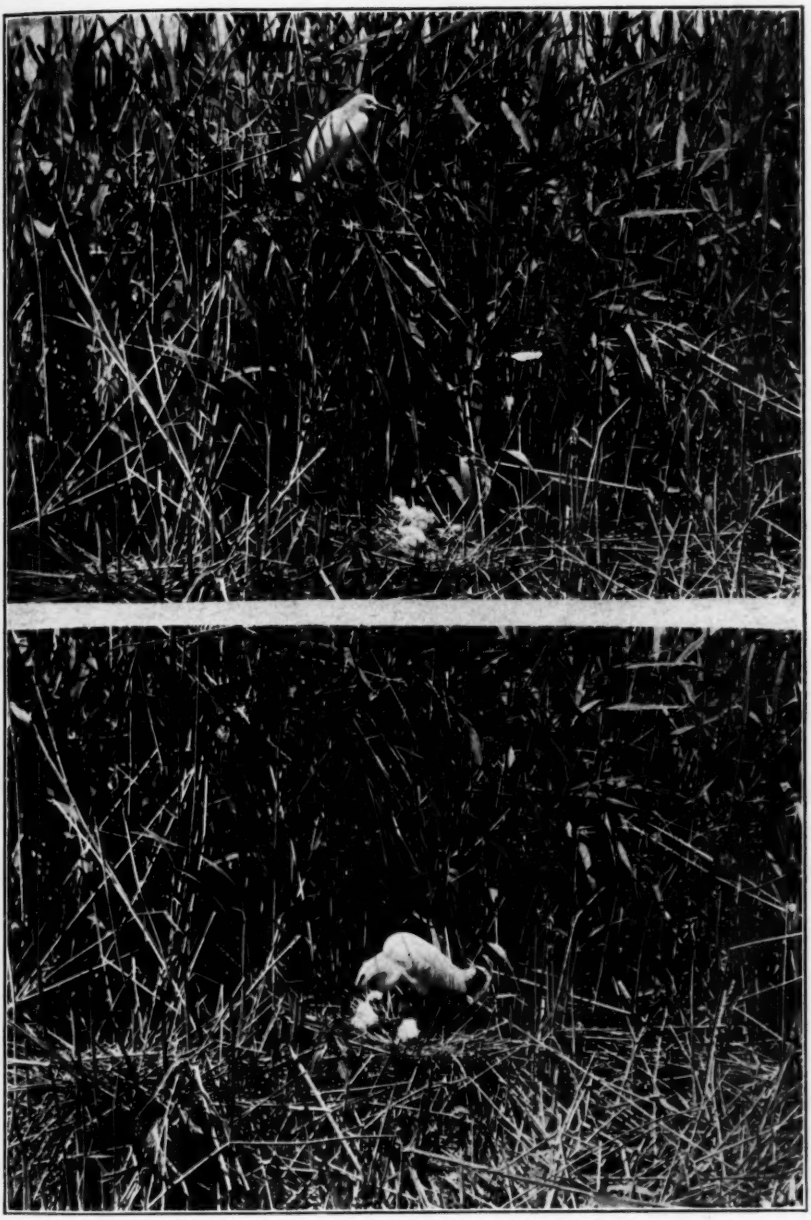
of the South American birds, so far as I have been able to find. Accepting Messrs. Bangs' and Peters' identification of our specimens from the Bear River Marsh as Brewster's Egret, and considering all western birds as the same, we find they compare with birds east of the Rocky Mountains as follows:

| | Averages in mm. | | |
|---|---|---|---|
| | Tarsus | Culmen | Wing |
| 27 Western Males (including Lower Cal.).. | 107.3 | 88 | 274.4 |
| 43 Eastern Males..... | 97.1 | 83.3 | 259.9 |
| 28 Western Females (including Lower Cal.) | 97.3 | 84.1 | 258.4 |
| 35 Eastern Females..... | 89 | 78.6 | 251.2 |

The characters on which *brewsteri* is based are rather poor, and the measurements are extremely variable, but the evidence is conclusive that the Egrets of eastern United States average smaller than those of the west, with the birds of the Cape region of Lower California representing one extreme. How to dispose of the birds of the western United States is a matter of individual opinion, but with the data available at this time, only two courses are open: one is to extend the range of *brewsteri* to include all of the region west of the Rocky Mountains, and the other is to drop the subspecies *brewsteri*, and to consider all the Snowy Egrets as one form, with the added statement that those of the west tend to average larger than those from the east. I believe, however, until further data are available to determine the status of the South American Egrets, that we are justified in considering our western birds as a subspecies, and I suggest that *Egretta thula brewsteri* be considered as a western race, with its range including, at least, the territory west of the foot-hills of the Rocky Mountains.

In examining the series of eighteen specimens from the United States National Museum, I separated them accurately into two series,—one from eastern United States, and one from the western, without looking at the data, with but one mistake, and that was a large, heavy-legged Heron from Florida (No. 78583). Many of the western birds with long tarsi are not necessarily "heavy-legged," but average as a whole, larger than those from the eastern United States.

The Herons nesting near Great Salt Lake build their nests in the cane in extensive open marshes, usually about two feet



Photos by Alfred M. Bailey

SNOWY EGRETS AND NESTS, BEAR RIVER MARSHES, UTAH.

above high water level, while all the nests I have seen along the Gulf coast have been in buttonwood, willow and cypress. I have never seen the Gulf coast birds nesting in the marshes, but always in the swamps where the thick tangled growth and deep water give them protection. My experience is too limited to state that the birds of the east and the west differ in their nesting habits; it may be just the lack of similar sites. There are, however, willow growths along the Bear River and the adjacent marshes in which the Herons could nest.

I have the records of four specimens from Mexico which I have listed separately. That the birds of the Great Salt Lake region migrate down both coasts of Mexico is proven by the returns from birds banded in Utah, the data for which are listed below. Birds from the western part of Texas, especially during the migratory season, are likely to be western nesting birds, as are specimens from both coasts of Mexico, so it would seem impossible to separate the birds of the two regions when in their wintering ground in Mexico,—just as it would be impossible to separate the races of the Great Blue Heron.

I am indebted for suggestions and for the loan and measurements of specimens to Dr. Alexander Wetmore, Mr. Outram Bangs, and Mr. James L. Peters, Mr. Harry S. Swarth, Mr. A. C. Bent, Professor H. R. Dill, Mr. L. M. Huey, and Mr. George Willett, to Mr. F. C. Lincoln for data on the banded Snowy Herons, and to Mr. J. D. Figgins for the use of specimens, and for permission to use the photographs made at the time of our visit to the Bear River Marshes. I have placed a letter in parentheses before each museum number, which refers to the museum in which the specimen will be found, as follows:

(A) United States National Museum,
(B) United States Biological Survey,
(C) Museum of Vertebrate Zoology,
(D) Museum of Comparative Zoology,
(E) Field Museum of Natural History,
(F) Colorado Museum of Natural History,
(G) State University of Iowa Museum,
(H) Collection of Dr. L. B. Bishop,
(I) Collection of Mr. George Willett,
(J) San Diego Museum of Natural History,
(K) Collection of Mr. Donald R. Dickey.

In a recent paper, (Condor Vol. XXIX, No. 1), Mr. Griffing Bancroft presents some interesting notes on Brewster's Egret and has suggested the possibility that *brewsteri* "may break into two forms, for some of the geographical isolations are great." The birds of the Great Salt Lake Valley are not "pocketed and isolated from Atlantic forms," however, as is shown by Mr. Lincoln's returns of banded birds.

I have often thought it possible that birds of the western United States could be considered as a race which is intermediate between the Atlantic and Gulf coast birds, and those of Lower California, for many of their measurements support this view. In wings and culmen the Salt Lake birds vary but little from eastern birds, and in length of tarsi they are slightly smaller than the birds of Lower California, and much larger than from eastern United States. But in races depending entirely on size, intermediate forms would prove most unsatisfactory, and, with the data available at present, there seems no other course than to consider all western birds as *Egretta thula brewsteri.*

I have taken the liberty of including in my article, the measurements given by Thayer and Bangs, in order that all the data possible will be available for comparison. Measurements of specimens, and data from banded birds are as follows:

Measurements (in millimeters) of adults.

EGRETTA THULA BREWSTERI Thayer and Bangs.

| | No. | Sex | Locality | Tarsus | Culmen | Wing |
|---|---|---|---|---|---|---|
| | [1]11418 | Male | Lower Cal., San Jose Is. | 112 | 86 | 261 |
| | 11419 | " | " " | 114 | 95 | 271 |
| | 11421 | " | " " | 110 | 98 | 282 |
| | 11422 | " | " " | 114 | 99 | 283 |
| | 11410 | Female | " " | 103 | 87 | 261 |
| | 11411 | " | " " | 99 | 84 | 260 |
| | 11412 | " | " " | 98 | 84 | 252 |
| | 11417 | " | " " | 105 | 94 | 260 |
| | 20279 | " | " " | 108 | 86 | 276 |
| | 10142 | " | " La Paz | 103 | 85 | 255 |
| (J) | 10648 | Male | Lower Cal., Scammons Lagoon | 103.6 | 94.6 | 280 |

[1] The measurements of these ten birds are copied from the original description of *brewsteri* No. 20279 is in the collection of E. A. and O. Bangs. The other specimens in that of John E. Thayer.

| | No. | Sex | Locality | Tarsus | Culmen | Wing |
|---|---|---|---|---|---|---|
| (J) | 10649 | Male | Lower Cal., Scammons Lagoon | 108.8 | 94.1 | 290 |
| [1](A) | 86390 | " | " " | 111 | 93 | 274 |
| (A) | 133778 | " | " Salton River | 104 | 92 | 287 |
| (A) | 102231 | " | " Magdalena Bay | 107 | 91.5 | 288 |
| (A) | 31955 | " | " San Jose | 112 | 94 | 280 |
| (A) | 133733 | Female | " Gardner Sta. | 94 | 84 | 261 |
| (A) | 133779 | " | " " | 98 | 83 | 260 |
| (A) | 102228 | " | " Magdalena Bay | 97.5 | 90 | 271 |
| (A) | 102227 | " | " " | 100 | 88 | 260 |
| (J) | 10650 | " | " Scammons Lagoon | 93.5 | 88.2 | 268 |
| (J) | 10651 | " | " " | 100.2 | 89.1 | 280 |
| (J) | 10652 | " | " " | 95.9 | 87.7 | 272 |
| (J) | 10653 | " | " " | 105.2 | 96.2 | 273 |

The males listed below are from Thayer and Bangs' paper.

| | | | | | | |
|---|---|---|---|---|---|---|
| [2] | 8794 | Male | S. Carolina, nr. Charleston | 105 | 87 | 260 |
| | 8795 | " | " " | 106 | 86 | 270 |
| | 25415 | " | " Frogmore | 100 | 87 | 258 |
| | 25417 | " | Georgia, Broro Neck | 105 | 88 | 265 |
| | 25418 | " | " " " | 96 | 83.5 | 255 |
| | 25419 | " | " " " | 96.5 | 87 | 251 |
| | 25420 | " | " " " | 97 | 83 | 251 |
| | 25421 | " | " " " | 95 | 76 | 248 |
| | 25416 | " | " " " | 94.5 | 88 | 257 |
| | 26637 | " | " McIntosh County | 93 | 79 | 259 |
| | 26638 | " | " " " | 83 | 82 | 245 |
| | 26639 | " | " " " | 99 | 85 | 268 |
| | 26640 | " | " " " | 106 | 83 | 261 |
| | 3972 | " | Florida, Cedar Keys | 97.5 | 81.5 | 250 |
| | 29226 | " | " Tarpon Springs | 94.5 | 74 | 265 |
| | 29227 | " | " " " | 93 | 77 | 255 |
| | 1093 | " | " Georgiana | 95 | 79 | 240 |
| | 6483 | " | Texas, Point Isabel | 97 | 84 | 247 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| (F) | 7020 | Female | Buzzard Island, S. Carolina | 88 | 73.5 | 260 |
| (F) | 7327 | " | " " " | 91 | 80 | 240 |
| (A) | 80350 | " | Cobb " Virginia | 94 | 82 | 245 |
| (A) | 90146 | " | Galoos, Florida | 93.5 | | 267 |

[1] The specimens from the United States National Museum (A) were taken in spring and fall, and were not breeding birds.

[2] Additional measurements from Thayer and Bangs' paper.

| | No. | Sex | Locality | Tarsus | Culmen | Wing |
|---|---|---|---|---|---|---|
| (A) | 171302 | Female | Pinar del Rio, Cuba | 92 | | 233 |
| (G) | | " | Avery Island, Louisiana | 90 | 82 | 259 |
| (G) | | " | " " " | 93 | 83 | 258 |
| (G) | | " | " " " | 83 | 75 | 250 |
| (G) | | " | " " " | 91 | 79 | 257 |
| (G) | | " | " " " | 93 | 75 | 259 |
| (G) | | " | " " " | 91 | 76 | 262 |
| (G) | | " | " " " | 92 | 80 | 251 |
| (G) | | " | " " " | 95 | 79 | 279 |
| (G) | | " | " " " | 82 | 74 | 258 |
| (G) | | " | " " " | 82 | 75 | 269 |
| (I) | 2363 | " | " " " | 115 | 82 | 270 |
| (F) | 11710 | " | " " " | 87 | 80 | 250 |
| (F) | 11711 | " | " " " | 89 | 79 | 247 |
| (F) | 11713 | " | " " " | 92 | 89 | 250 |
| (E) | 2093 | " | Buttonwood Pond, Inagua | 92 | 82 | 273 |
| (D) | 42559 | " | Smyrna, Florida | 91 | 74 | 240 |
| (D) | 42556 | " | " " | 88 | 78 | 240 |
| (K) | | " | Vermillion County, Florida | 90 | 80.5 | 258 |
| (E) | | " | Pudry Island, Texas | 102 | 88 | 251 |
| | [2] 25422 | " | Georgia, Broro Meck | 88 | 80 | 243 |
| | 26641 | " | " McIntosh County | 83 | 78 | 241 |
| | 26642 | " | " " " | 84 | 82 | 248 |
| | 26643 | " | " " " | 86 | 79 | 237 |
| | 26644 | " | " " " | 89 | 79 | 240 |
| | 26645 | " | " " " | 88 | 78 | 247 |
| | 26646 | " | " " " | 84 | 78.5 | 243 |
| | 26647 | " | " " " | 84 | 76 | 230 |
| | 29228 | " | Florida, Tarpon Springs | 86 | 74 | 242 |
| | 29229 | " | " " " | 94 | 72.5 | 254 |
| | 29230 | " | " " " | 74 | 73 | 242 |

SNOWY HERONS FROM WESTERN UNITED STATES.

| | No. | Sex | Locality | Tarsus | Culmen | Wing |
|---|---|---|---|---|---|---|
| (F) | 11417 | Male | Bear River, Utah | 104 | 82 | 270 |
| (F) | 11418 | " | " " " | 100 | 85 | 277 |
| (F) | 11419 | " | " " " | 109 | 93 | 269 |
| (F) | 11289 | " | " " " | 112 | 89 | 277 |
| (F) | 4250 | " | " " " | 104 | 82.5 | 270 |
| (F) | 4249 | " | " " " | 104 | 82 | 272 |
| (F) | 3098 | " | Barr, Colorado | 106 | 85 | 275 |
| (F) | 4134 | " | Littleton, Colorado | 110 | 84 | 293 |
| (H) | | " | Salt Lake, Utah | 98 | 87 | |
| (H) | | " | " " " | 102 | 82 | |

Photos by Alfred M. Bailey

NESTS WITH EGGS AND YOUNG OF THE SNOWY EGRET, BEAR RIVER MARSHES, UTAH.

| | No. | Sex | Locality | Tarsus | Culmen | Wing |
|---|---|---|---|---|---|---|
| (B) | 270616 | Male | Bear River, Utah | 106 | 88 | 268 |
| (B) | 261040 | " | " " " | 110 | 76 | 265 |
| (B) | 261042 | " | " " " | 106 | 82 | 265 |
| (B) | 270517 | " | " " " | 105 | 82 | 256 |
| (B) | 272935 | " | Great Salt Lake, Utah | 110 | 79 | 267 |
| (B) | 111490 | " | Ft. Hauchuca, Arizona | 108 | 99 | 288 |
| (C) | 4490 | " | San Diego, California | 105.7 | 84.8 | 254 |
| (F) | 11807 | Female | Henderson, Colorado | 100 | 85 | 260 |
| (F) | 11420 | " | Bear River, Utah | 89.5 | 80 | 240 |
| (F) | 11483 | " | " " " | 91 | 80 | 244 |
| (B) | 287712 | " | " " " | 88 | 79 | 236 |
| (B) | 270513 | " | " " " | 93 | 79 | 253 |
| (B) | 270511 | " | " " " | 87.5 | 80 | 258 |
| (B) | 261041 | " | " " " | 94 | 82 | 263 |
| (B) | 261038 | " | " " " | 91 | 70 | 256 |
| (B) | 270515 | " | " " " | 101 | 78.5 | 256 |
| (B) | 269087 | " | Lake Burford, New Mexico | 101 | 80 | 247 |
| (J) | 126 | " | Riverside, California | 93 | 85.2 | 248 |
| (C) | 4491 | " | Santa Barbara, " | 98.8 | 83.5 | 245 |
| (A) | 31962 | " | San Pedro, " | 101 | 84 | 256 |
| (D) | 33348 | " | Sacramento, " | 96 | 84 | 247 |

SNOWY HERONS FROM EASTERN UNITED STATES.

| | No. | Sex | Locality | Tarsus | Culmen | Wing |
|---|---|---|---|---|---|---|
| (G) | | Male | Avery Island | 94 | 83 | 265 |
| (G) | | " | " " | 97 | 83 | 275 |
| (G) | | " | " " | 92 | 86 | 288 |
| (G) | | " | " " | 95 | 82 | 272 |
| (F) | 11714 | " | " " | 98 | 89 | 250 |
| (F) | 7021 | " | Buzzard Island, S. Carolina | 86 | 78 | 240 |
| (F) | 7326 | " | " " " | 100 | 88 | 262 |
| (F) | 7024 | " | " " " | 98 | 84 | 266 |
| (F) | 7022 | " | " " " | 97 | 79.5 | 257 |
| (F) | 7019 | " | " " " | 101 | 85 | 264 |
| (F) | 7324 | " | " " " | 102 | 88 | 262 |
| (A) | 140103 | " | Tampa, Florida | 94 | 77.5 | 264 |
| (A) | 119003 | " | " " | 98 | 84 | 269 |
| (A) | 176953 | " | " " | 96.5 | 82 | 271 |
| (A) | 191050 | " | Barbuda, West Indies | 101 | 86 | 277 |
| (A) | 73583 | " | Florida | 106 | | 289 |
| (D) | 27190 | " | Preston, Cuba | 90 | 82 | 248 |
| (D) | 82592 | " | Jupiter, Florida | 96 | 86 | 240 |
| (D) | 42560 | " | Smyrna, Florida | 105 | 85 | 251 |
| (D) | 42558 | " | " " | 103 | 86 | 255 |

| | No. | Sex | Locality | Tarsus | Culmen | Wing |
|---|---|---|---|---|---|---|
| (D) | 42557 | Male | Smyrna, Florida | 96 | 81 | 248 |
| (E) | 33780 | " | Myiakka River, Florida | 103 | 84.5 | 280 |
| (E) | 33781 | " | Manata County, " | 96 | 86 | 265 |
| (K) | | " | Vermillion County, " | 90 | 81.6 | 268 |
| (E) | 39759 | " | Corpus Christi, Texas | 94 | 82 | 248 |

SNOWY HERONS FROM MEXICO.

| | No. | Sex | Locality | Tarsus | Culmen | Wing |
|---|---|---|---|---|---|---|
| (A) | 57885 | Male | Tehauntepec, Mex. (west) | 100 | 82.5 | 262 |
| (D) | 73194 | " | Western Mex. Rio Coahujami | 96 | 81 | 251 |
| (C) | 13200 | " | Yukatan, Rio Tagalos | 106 | 81 | 275 |
| (D) | 48389 | Female | Mexico Tamp. Matamoros | 96 | 79 | 251 |

RETURNS FROM BANDED SNOWY EGRETS.

(Data from U. S. Biological Survey)

| Number | Banded on | At | Recovered on | At |
|---|---|---|---|---|
| 313448 | 7/15/25 | Salt Lake Co., Utah | 8/24/25 | (about) Pocatello, Idaho. |
| 313353 | 7/27/25 | " " " " | 11/16/25 | (about) El Paso, Texas, 40 mi. north. |
| 313379 | 7/27/25 | " " " " | 9/20/25 | El Paso, Texas. |
| 3615 | 7/ 3/16 | Bear River Mrshs, Utah | 1/20/23 | Escuinapa, Sinaloa, Mex. |
| 3671 | 7/ 3/16 | " " " " | 3/—/17 | Mexcaltitan, Tepic, Mex. |
| 3648 | 7/ 3/16 | " " " " | 6/ 1/17 | Papagayo Lagoon, Guerrero, Mexico. |
| 3608 | 7/ 3/16 | " " " " | 7/13/19 | San Pedro River, Cochise County, Arizona. |

*Chicago Academy of Sciences,*
*September 1, 1927.*

# NOTES ON THE ALASKA CHICKADEE.

BY OLAUS J. MURIE.

THE Alaska Chickadee, *Penthestes cinctus alascensis*, appears seldom in ornithological literature, since its range lies in rather inaccessible regions. Therefore, additional observation on this species may be worth while.

This bird was first taken by MacFarlane[1] in 1864, near Fort Anderson. The nest and eggs which he found on June 1 of that year are the only ones on record for this subspecies, although Grinnell[2] obtained a female with an egg in the oviduct, May 8, 1899, on the Kobuk River. He collected 14 specimens. Nelson[3] obtained a series of specimens in the lower Yukon region, chiefly Nulato, during the period from 1877 to 1881. Turner[4] also collected a few, taking a single specimen at St. Michael, where, he says, he never saw them in the breeding season. A. W. Anthony[5] observed Chickadees "at long intervals in the willows" at Grantley Harbor, Alaska, in 1905. He believed all he saw were *alascensis*.

Dr. R. M. Anderson[6] found a few in the willows on Hulahula River, on the north side of the Endicott Mountains, in Alaska, November and December, 1908, and in the spruce timber south of the divide January and February, 1909. In the delta of the Mackenzie, on the south side of Richard Island, a single bird was seen, and on Horton River, about 15 miles south of Langton Bay, another Chickadee, believed to be of this species, was observed. None were found east of that locality.

Dr. H. C. Oberholser had called my attention to the fact that

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[1] Roderick MacFarlane, Notes on and list of birds and eggs collected in Arctic America, 1861–1866. Proc. U. S. Nat. Mus., XIV, pp. 413–466, 1891.

[2] Joseph Grinnell, Pacific Coast Avifauna, No. 1, 1900.

[3] E. W. Nelson, Report upon Natural History collections made in Alaska. Arctic series of publications issued in connection with the Signal Service, U. S. Army, No. III, 1887.

[4] Lucien M. Turner, Contributions to the Natural History of Alaska. Arctic series of publications issued in connection with the Signal Service, U. S. Army, No. II, 1886.

[5] A. W. Anthony, Stray Notes from Alaska, Auk, vol. XXIII, No. 2, pp. 179–184, April, 1906.

[6] R. M. Anderson, Stefansson's My Life with the Eskimo. 1913.

several specimens of the Alaska Chickadee had accumulated in the collections I had sent in to the U. S. Biological Survey from Alaska. Then in the summer of 1926 I had opportunity to make more extensive observations on this species, when I made a trip into the Old Crow River region to band waterfowl.

The first few specimens, previous to this last expedition, were collected in winter. Two were taken in February, 1921, on McManus and Twelve-mile Creeks, on the winter trail between Fairbanks and Circle, Alaska. They were found in the willows bordering the streams, at the edge of the spruce forest. On February 24, 1923, two more were taken on the Alatna River on the south side of the Endicott Mountains. On April 6, 1924, another specimen was taken on the Distna River, near the Beaver Mountains, in the Kuskokwim district. This is the southernmost record for this form.

In the summer of 1926 I went into the Old Crow River district in Yukon Territory. This time I was able to observe the Chickadees in summer on their nesting grounds. The season was too far advanced for nests and eggs, but I arrived in time to find the broods of young evidently just out of the nests. A Chickadee was heard near the mouth of Old Crow River, June 24, but was not identified. The birds were secretive at this time and not much in evidence. But on July 8 a noisy family group was found and two specimens taken. After this date they became very common.

During July and part of August, I was very busy banding waterfowl and often was not prepared to collect specimens when these Chickadees were present, but they were easily approached or attracted, and a near view with binoculars left no doubt whatever as to identity in most cases. Thus, by observing closely and collecting a specimen occasionally, I was able to trace the occurrence of the species throughout the region covered. A series of thirteen specimens was taken.

The Alaska Chickadee is easily distinguishable from *hudsonicus* in the field, provided a reasonably near view can be had. *Penthestes c. alascensis* is white over the whole side of the neck, and the flanks are pale, as contrasted with the ashy neck and darker, brown flanks of *hudsonicus*. The crown of the former is also paler than that of *hudsonicus*. In general the Alaska Chickadee is lighter

in color throughout. The side of the neck and the flanks furnish the best field marks for identification in life.

The characteristic call of this Chickadee generally consisted of two notes, which I described variously in my field notes as "dee-deer," "chee-ee," or "pee-vee," with emphasis on each syllable and a tone and accent which seemed to imply a peevish or complaining state of mind. Nelson describes it as " 'pistéé-téé,' uttered in a hissing tone." I imagined this call differed from that of the Hudsonian Chickadee, but in the absence of the latter for comparison at the time I can not rely too greatly on this impression.

The habitat of the Alaska Chickadee was spruce and willow woods covering the valley of the Old Crow River, about a mile in width, but much more in some places. The edge of this valley rises abruptly about 75 feet above the stream to the level of the flat tundra, which stretches away for many miles on either side. The tundra is covered with numerous ponds and lakes, and except for a few small groups of spruces here and there it is practically treeless, although near the mouth of the river, where it enters the general wooded area of the Porcupine River district, there is a more general distribution of forest. The wooded valley of the Old Crow and some of its tributaries, therefore, carry the spruce woods in the form of long sinuous belts through a tundra region. These narrow belts of forest are the home of the Alaska Chickadee, apparently to the exclusion of other Chickadees. *Penthestes hudsonicus* was not collected on the Old Crow nor was it identified among those observed.

On August 11, on the return journey, a Hudsonian Chickadee was taken on the Porcupine River just below the mouth of Old Crow River. South of this point Chickadees were heard on several occasions but generally with no opportunity for identification. Three more were collected, however, and all proved to be *hudsonicus*. No more Alaska Chickadees were found south of Old Crow River. This seems to indicate a rather marked separation of the habitats of the two species, and one is tempted to draw certain conclusions.

A consideration of the circumstances under which the Alaska Chickadee has been observed tends to show that it prefers the

edges of forest tracts or regions where spruce forest is broken up, as contrasted with more extensive, continuous forest areas. In the Beaver Mountain country, where one of my specimens was taken, the forest tends to become broken up, and those taken on McManus and Twelve-mile Creek, although in the midst of an extensive forest region, were near the upper edge of the spruce, just below the bare hilltops. Grinnell says, "The Alaskan Chickadee was never seen in company with the other species and was an inhabitant of the spruce tracts along the base of the mountains rather than in the river bottoms." Other records show that *alascensis* was found even in the willows beyond the spruce woods.

The range of this bird borders the northern tree limit, where habitat conditions mentioned here may be found. In more southern areas altitude or other factors may produce similar conditions. Observations on the Old Crow River indicate that, at least in summer, *alascensis* and *hudsonicus* are separated by habitat choice even though their general ranges may greatly overlap. Possibly this separation is not equally sharp in every instance. In winter, also, there may be a somewhat different distribution and greater mingling of the two forms.

*Biological Survey,*
*Washington, D. C.*

# NOTES ON SOME BIRDS OF SOUTHEASTERN ALASKA.

BY GEORGE WILLETT.

THE article by Alfred M. Bailey in the 'The Auk,' for January, April, and July 1927, was of especial interest to the writer, who has resided in the region under discussion for the greater part of the past fifteen years. The following notes may be of interest, as adding somewhat to the information contained in Mr. Bailey's admirable paper.

**Phalacrocorax auritus cincinatus.** WHITE-CRESTED CORMORANT.—In regard to this Cormorant, the writer's experience in southeastern Alaska was practically the same as Bailey's. It was found to be rather common in winter throughout the southern part of the Alexander Archipelago, but, in spite of a particularly careful search and many inquiries, it was never found breeding in the region and adult birds were apparently entirely absent during the summer months. The suspicion that the species might breed around interior lakes and come to the coast in winter has previously been expressed (Condor, xxv, 1923, p. 27). In the summer of 1925 the writer made a trip along the coast of Alaska as far as southern Bering Sea, during which trip he had his first sight of this bird on its breeding grounds. Several birds sitting on their nests were noted on a small rock, off Kodiak Island, a few miles from the town of Kodiak, on July 17. Later, birds in breeding plumage were seen as far west as Umnak Island, Aleutians. The breeding range may probably extend to the eastward from Kodiak, also, as many likely rocks were seen between this point and Prince William Sound, which were not approached closely enough to admit of identification of the birds inhabiting them.

That the White-crested Cormorant does not breed in southeastern Alaska would seem to be fairly well established. Also, Major Brooks (Pac. Coast Avif. 17, p. 31) states that he has never seen it nesting on the Queen Charlottes. These facts would seem to indicate a hiatus in the breeding range of the subspecies, that is, of course, if the bird nesting off the Washington coast is the same as the Alaskan bird. Considering the above facts, a suspicion might, perhaps, be justifiable that the geographical line dividing this form from *P. a. albociliatus* may be drawn in the wrong place. At any rate, the breeding range as given in the A. O. U. 'Check List' and followed by Bent in his 'Life Histories' seems to require revision, as does, also, Bent's implication that the form is non-migratory.

**Phalacrocorax pelagicus resplendens.** BAIRD'S CORMORANT.—The record by Bailey of a specimen of this form taken by the writer off Forrester Island, July 18, 1920, seems an unfortunate one. It would imply

the straggling of a bird of this form to Alaska, which is almost certainly not the case. The writer considers the specimen only an unusually small *P. p. pelagicus*, a form subject to considerable variation in size, and regrets the addition of *resplendens* to the list of Alaskan birds on such evidence.

**Marila marila.** SCAUP DUCK.

**Marila affinis.** LESSER SCAUP DUCK.—Bailey's account of these two species shows a very surprising difference between his observations and those of the writer. He states that *affinis* is abundant during winter and spring and that he has a few definite records for *M. marila*. During the writer's stay in the region under discussion, a great many Scaups have been shot by him personally and he has examined large numbers shot by others and has yet to see a specimen that could be identified as *affinis*, the species considered by Bailey to be the abundant one. Swarth and Brooks (l. c., p. 34) give only one record for *affinis* from the British Columbia coast. Bent (Life Histories North American Ducks, p. 223) gives the winter range for *affinis* as north to southern British Columbia.

The writer, who has been in the field many times with Bailey, has the highest regard for his qualifications as a field observer and has no intention of here questioning the accuracy of his observations, but hopes that this note will result in the placing on record, by Bailey or some other collector, definite specimens of *Marila affinis* taken in southeastern Alaska in winter.

**Cryptoglaux acadica acadica.** SAW-WHET OWL.—A female breeding bird collected by the writer on Forrester Island, June 5, 1914, now in the Biological Survey Collection (Auk, xxxii, p. 303) seemed to be referable to the above form rather than to the Queen Charlotte Island race.

**Glaucidium gnoma grinnelli.** COAST PYGMY OWL.—A recent opportunity of comparing Wrangell and Dall Island specimens of the Pygmy Owl with specimens of *swarthi* and *grinnelli* has shown that the Alaskan coast birds are referable to the latter race.

**Ceryle alcyon caurina.** WESTERN KINGFISHER.—Though Bailey states that he failed to observe this bird during the summer months, the writer did not find it rare at that season in the vicinity of Craig and Ketchikan. It is, however, much less generally distributed in summer than in winter. A bird was flushed from a burrow in a low cut-bank of a stream at the head of Port San Nicolas, Prince of Wales Island, May 9, 1922.

**Dryobates villosus sitkensis.** SITKA HAIRY WOODPECKER.—The Hairy Woodpecker of the region, recorded by Bailey as *D. v. harrisi*, is undoubtedly referable to *sitkensis*. Knowing that the validity of this latter form had been questioned, the writer made a special effort to obtain these birds and accumulated a series of more than thirty specimens. These easily demonstrate that *sitkensis* is a well marked race.

**Dryobates villosus monticola.** ROCKY M'TN. HAIRY WOODPECKER.—A female bird taken at Craig, November 7, 1919 (No. 2935 Coll. G. W.) seems referable to this subspecies. It certainly is not *sitkensis*, being separable from that form at a glance by its light under parts and white

spotting of the inner secondaries. It is probably a straggler from the interior of Alaska.

**Sphyrapicus ruber ruber.** NORTHERN RED-BREASTED SAPSUCKER.—This bird is apparently much more plentiful in the southern part of the Alexander Archipelago than it is around Juneau. A number of nests containing young were found in the vicinity of Craig during the month of June. Young were seen outside the nest June 23, 1923. A nest containing newly-hatched young was found on Betton Island, about fifteen miles north of Ketchikan, May 26, 1926. This bird is probably migratory to some extent, as it is apparently much less common in winter than at other times of the year. Winter specimens were taken at Craig, November 23, 1922, and January 26, 1920.

**Colaptes cafer saturatior.** NORTHWESTERN FLICKER.—This species, though much less common than Flickers are in most parts of the United States, is not nearly so rare in extreme southeastern Alaska as Bailey found it around Juneau. It was fairly common at Wrangell and Craig and might be seen or heard almost daily at Ketchikan.

**Selasphorus rufus.** RUFOUS HUMMINGBIRD.—Extreme migration dates for this bird are April 10 (1925, Ketchikan) and September 9 (1922, Craig). The height of the spring migration is between April 28 and May 7.

**Zonotrichia coronata.** GOLDEN-CROWNED SPARROW.—A common migrant at Forrester Island, Craig, Ketchikan and Wrangell. Most of the spring migration takes place between April 29 and May 5. Extreme dates are April 22 (1921, Wrangell), and May 29 (1920, Forrester Island). Most plentiful in fall migration between September 28 and October 12. Extreme fall dates are September 8 (1921, Craig) and October 21 (1920, Wrangell). It would seem that Bailey's late June dates from Glacier Bay might indicate, as he suggests, a close proximity to the breeding range.

**Melospiza melodia.** SONG SPARROW.—The writer has had some personal experience with all of the Alaskan races of the Song Sparrow at present on the A. O. U. List and believes that one or two differences between the habits of the various subspecies may be worthy of mention. *M. morphna* and *M. m. rufina*, of southeastern Alaska, occur in inland localities several miles from salt water, while *caurina, kenaiensis, insignis* and *sanaka* appear to be strictly beach birds, nesting and feeding within a few yards of the beach. Nests of *morphna* found at Ketchikan were often placed several feet up in trees and one was found inside a roll of wire netting that was lying just above the high tide line. This latter nest contained four nearly fresh eggs April 29, 1926. All nests of *rufina* found were either flush with the ground or in short grass a few inches up. The writer has not taken the specimens necessary to prove the wintering of *morphna* in Alaska, but has observed what was apparently the same pair of birds daily throughout the winter until they built their nest in the spring. *M. m. rufina* and *caurina* are both rather common throughout the winter months. Extreme dates for specimens of *caurina* are August

15 (1919, Craig), and April 23 (1920, Wrangell). Though a particularly careful search was made in fall and winter for the more westerly forms of *Melospiza melodia*, no indication of their occurrence was found.

**Passerella iliaca insularis.**

**Passerella iliaca sinuosa.**—During the entire time spent in southeastern Alaska, a particular effort was made to obtain specimens of the various Fox Sparrows that breed in large numbers in western Alaska. With but three exceptions, however, birds taken proved to be the breeding form, *P. i. townsendi*. A male bird taken near Ketchikan, March 29, 1926, seems referable to *insularis*, and a male *sinuosa* was taken in the same locality two days later. A bird taken at Craig, October 22, 1919, differs greatly from any of the known forms of *Passerella*. It is much darker than the darkest *fuliginosa* to be found in any collection the writer has inspected. Mr. Swarth has examined this bird and states that he does not know what it is. Had other similar specimens been found, the writer would not hesitate to describe it as a new race, but there is a possibility of its being only a freak, consequently it would seem best to let it remain for the present, at least, without a name.

**Iridoprocne bicolor.** TREE SWALLOW.—Extreme migration dates for this bird are April 10 (1921, Wrangell), and August 15 (1922, Craig).

**Hirundo erythrogastra palmeri.** ALASKA BARN SWALLOW.—Appears much later in spring than does the Tree Swallow. Earliest noted, May 15 (1925, Ketchikan). The summer of 1925 a nest containing four eggs was noted on the porch of the Federal Court House at Ketchikan. The last egg was laid July 11, the young hatched July 24, and flew August 13.

**Vermivora celata lutescens.** LUTESCENT WARBLER.—A common summer resident throughout the region; eggs laid from May 25 to June 10. Extreme migration dates, April 20 (1925, Ketchikan), and September 24 (1922, Craig).

**Dendroica aestiva rubiginosa.** ALASKA YELLOW WARBLER.—Two seen at Ketchikan, May 30, 1924, and one September 6, 1925.

**Dendroica coronata hooveri.** WESTERN MYRTLE WARBLER.—One seen at Craig, September 27, 1919; one or two May 9–10, 1921, and one at Wrangell, April 29, 1921.

**Dendroica townsendi.** TOWNSEND'S WARBLER.—Common in spring migration at Craig, April 27 (1920) to May 12 (1922). Occasionally seen in summer on wooded mountain sides. Latest fall record August 31 (1922).

**Nannus hiemalis pacificus.** WESTERN WINTER WREN.—As the Check-List gives the range of this subspecies as north only to Prince William Sound, its occurrence at Seward is worthy of record. Three or four birds were seen there in late November, 1926, a male being taken November 19.

**Hylocichla ustulata ustulata.** RUSSET-BACKED THRUSH.—Arrives from the south in May. Earliest date, May 16 (1925, Ketchikan). Latest noted in fall, August 15 (1922, Craig). Nests in latter part of June.

**Hylocichla guttata nana.** DWARF HERMIT THRUSH.—Fairly common in summer. Earliest record, April 23 (1925, Ketchikan), latest in fall September 21 (1921, Craig). Nest containing four eggs, advanced in incubation, found at Ketchikan, June 8, 1924.

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# THE WORK OF BERNHARD HANTZSCH IN ARCTIC ORNITHOLOGY.[1]

BY RUDOLPH MARTIN ANDERSON.

RECENT investigations in the history of the Arctic, and particularly that portion centering around Baffin Island, the largest and the least known insular portion of North America, have brought to my attention a considerable mass of literature important to American ornithology and of fascinating interest, which has received far less attention than it deserves. That the work of Bernhard Hantzsch has been overlooked by American ornithologists is perhaps not surprising, for although this young and promising naturalist came to an untimely end at a remote and uncharted part of Baffin Island in 1911, his fate remained unknown for some time.

Hantzsch had made a name for himself among European ornithologists; his work on Labrador birds was important and contained much new material; but his most important work, containing a great contribution to the knowledge of an ornithological *terra incognita* with over two hundred thousand square miles of unexplored hinterland, is scarcely known on this side to any but bibliographers. The greater tragedies of Scott and other contemporary expeditions obscured his work as an Arctic explorer; the beginning of the Great War dwarfed interest in peaceful scientific pursuits; and Hantzsch's results, printed in German only, have since that time been either unavailable or overlooked by ornithologists in other countries. Even the field of his northern work, where traditions of explorers are usually remembered, is singularly barren of information. The Eskimos who accompanied Hantzsch have nearly all died, the whalers have withdrawn, the local missionary of his time has moved away, leaving little but a vague memory of some German who went far away into the interior and died there.

I am particularly indebted to the Emma Shearer Wood Ornithological Library of McGill University, to the Toronto University Library, and to the Library of Congress, for courtesies to our

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Museum library by the loan of several rare copies of German scientific periodicals, and to my wife for faithful collaboration in the manuscript translation of several hundred pages of the Hantzsch material.

In forming a correct picture of Bernhard Hantzsch, we can best arrive at a true perspective by examining his history, his works, and the testimony of his friends. As an ornithologist, he was many-sided, and in a life of barely thirty-six years, made notable contributions in various branches of his favorite study. He first gave attention to the bird life of his home and accomplished much which later bore fruit in popular articles and in a Check-List of the Birds of the Kingdom of Saxony. As a taxonomist he described new subspecies of raven and linnet from Iceland; as an oölogist he made scientific studies on the alteration and change of the egg-shell through brooding and the influence of the nesting-place; and as an ornithologist he prepared avifaunal lists of important regions, two in Europe and two in North America.

Born in Dresden, Saxony, January 12, 1875, the son of a public school master, Hantzsch followed his father's calling. He was said to have had little inclination for foreign languages, but later, according to his friend, Professor A. Jacobi, Director of the Zoological-Anthropological Museum of his native city, he made himself master of Croatian, English, and Danish. To this we must add a fair knowledge of Eskimo, as evidenced in his Labrador and Baffin Island notes. His inclinations were towards geography, natural history, and drawing, and his later writings, sketches, and maps give evidence of talents in these lines.

At an early age, Hantzsch made a long stay for his health in the Tharandt Forest, near Dresden, followed by a three-year period as assistant teacher in the village of Grillenberg in the middle of the forest, and the opportunities for study of bird life there seem to have determined him toward an ornithological career. His early ambition was to make a stay of several years in German East Africa, pursuing ornithological work, but this plan fell through for lack of funds, and his attention was later turned northward. A permanent appointment to the public school of Plauen, a suburb of Dresden, in 1897, gave him opportunity to extend his bird studies in the varied terrain of mountain, pine-barrens, and

plains of the region. The summer holidays of 1898 were spent in Slavonia, studying the waders and waterfowl among the reeds of the Danube, and connections being made with local hunters, similar trips were made there for three succeeding years, followed in 1901 by a trip to Bulgaria accompanied by Dr. Braun, a physician and ornithologist of Dresden. In Sofia, he received assistance from Dr. Paul Leverkühn, the well-known German naturalist and councillor of state, enabling him to study the birds of prey of southern Europe in the Rhodope Mountains and the Balkans.

During this time, Hantzsch had been gradually changing his ultimate goal from Africa to the North, where close study of the literature had shown him that many questions in ornithology awaited an answer. Having decided to go first to Iceland, he prepared himself linguistically and zoologically with what we are accustomed to call characteristic German thoroughness, or perhaps better, the persistence of a born naturalist, and by the use of his own modest means, spent the time from April 21 to September 8, 1903, in Iceland. Hantzsch regarded the rich results of this summer as a foundation for work in Icelandic ornithology, but learning that an extensive survey of Iceland to last four years, was being planned by Danish zoologists, he gave up further pursuit of this plan. His 'Contribution to Knowledge of the Avifauna of Iceland,' 1905, was, however, the only work on the ornithology of Iceland giving systematic and biological knowledge from the modern standpoint. Two new subspecies of birds were described by him from Iceland, *Acanthis linaria islandica*, 1904, and *Corvus corax islandicus*, 1906, in 'Ornithloogische Monatsberichte.'

Other publications up to this time, and previous to his last expedition, include 'The Bird Voice,' (Natur und Haus, 1900), 'The Danube Marshes,' (Natur und Haus, 1901), 'On the Changes of the Egg-shell,' (Zeitschrift für Oölogie, 1901), 'On the Occurrence of *Locustella fluviatilis* (Wolf) in the Kingdom of Saxony,' (Ornithologische Monatsberichte, 1902), 'Poisoned Laughing Gulls,' (Ornithologische Monatsberichte, 1902), 'Contributions to Characters and Habits of our Herons,' (Ornithologische Monatsberichte, 1902), 'Breeding Birds of the Region of Königswartha (Lausitz),' (Journal für Ornithologie, 1903), 'Check-List of the

Species of Birds Observed in the Kingdom of Saxony,' (issued by the Ornithological Society of Dresden, 1903), 'On the Note of Gallinago gallinago (L.),' (Ornithologische Monatsberichte, 1904), 'The Legal Bird Protective Regulations and Their Enforcement, especially in the Kingdom of Saxony,' (Ornithologische Monatsberichte, 1904), 'On the Weight of Birds in the Flesh,' (Ornithologische Monatsberichte, 1906). The latter was a subject which Hantzsch studied faithfully and the reports of his later expeditions show that he carefully recorded the weights in grammes of all large and small birds, as well as birds' eggs, taken by him in the field, important data which are neglected by most field collectors. Other articles include 'The Migration of the Rock Ptarmigan in Northeastern Labrador,' (Deutsche Jäger-Zeitung, 1907), 'On the Study of Arctic Birds,' (Journal für Ornithologie, 1908), 'Contribution to Knowledge of the Avifauna of Northeastern Labrador,' (Journal für Ornithologie, 1908), and 'On the Preparation of Collections of Birds' Eggs.' (Natur und Haus, 1908).

Being discouraged from further work in Iceland, Hantzsch began to cast about for other northern fields. Greenland had been worked by Danish ornithologists as far as possible, and for pecuniary reasons he had to refrain from visiting uninhabited regions. Hantzsch realized that northern Asia had many secrets concealed from the ornithologist, but the disorders prevailing in the Russian Empire at that time (revolution of 1905) made that region inadvisable, or perhaps even impossible for a stranger to visit. Hence he turned to Arctic America, where as he said, a vast area has not only been little investigated from an ornithological standpoint, but the German had little to fear of being hindered in his studies, or indeed of not being supported or encouraged by the English and American owners respectively.

Hantzsch had made acquaintance with English ornithologists, and in the preface to his Labrador work speaks of the hospitality which he experienced in the home of the venerable (ehrwürdig) Newton in Cambridge, the widely-experienced (vielerfahrenen) Dresser in London, and the excellent (vortrefflichen) Hartert in Tring. He was also a fellow-passenger from Newfoundland with J. G. Millais, of Sussex, well-known for his studies on the ducks.

Having definitely decided to take up Arctic work, Hantzsch

began careful preparation, realizing, as he writes at the time, that thorough ornithological results beyond the limits of tree growth may be obtained only in a stay of years. Every expedition demands a length of time which can not be determined before setting out, while the climatic conditions of the different years are so varied that no satisfactory judgment may be reached in a single winter. He decided first of all to make a preliminary expedition and learn as much as could be accomplished in one season.

Choosing the newly-founded mission Killinek (Port Burwell), northeast of Ungava Bay, near the entrance to Hudson Strait, he obtained permission to take passage on the mission steamer "Harmony" from London to Labrador and return. Leaving London July 3, 1906, he was landed at Port Burwell August 5, after a somewhat difficult voyage to Resolution Island and through difficult ice in Hudson Strait. Here he remained until October 11, spending the time in daily ornithological work on the mountains and lakes, or along the coast in small boats with Eskimo companions. After leaving Killinek, he was enabled to stop from three to nine days at six different mission stations down the Labrador coast, namely, Rama, Hebron, Okak, Nain, Hoffenthal, and Maggovik, reaching St. Johns, Newfoundland on November 16.

Hantzsch's work entitled 'Contribution to Knowledge of the Avifauna of Northeastern Labrador,' published in two installments, 111 pages, in 'Journal für Ornithologie,' 1908, gives an excellent description of the geographical features of this rugged mountainous district, and of climatic conditions on the south side of Hudson Strait. 98 species of birds are recorded as occurring in the district, with detailed accounts of the habits of those which he was able to study carefully. Remarkably full data are given in regard to all birds preserved, weights and measurements in the flesh, colors of soft parts are described with meticulous care, and all specimens examined for external and internal parasites. Where stomach contents and parasites from Hantzsch's specimens were determined by other specialists they are quoted. While in nomenclature he follows the usage of the time, he avers that there is still much to be learned in the investigation of the subspecies and their geographical distribution. Showing familiar-

ity with the ornithological literature of the region, he frequently cites the works of Ludwig Kumlien (1879), Lucien M. Turner (1886), H. B. Bigelow (1902), John Macoun (1903–1904), C. W. G. Eifrig (1905), A. P. Low (1904–05–06), F. M. Chapman (1906), Charles W. Townsend and Glover M. Allen (1907). The missionary, W. Perrett, who for years was interested in the birds of Labrador, helped Hantzsch considerably, and his observations are quoted extensively. Hantzsch freely criticizes some of these old records as being uncertain, contradictory, and in many cases patently incorrect, but lack of special research material prevented him from following up all of the doubtful records. He calls attention to the fact that outside of the 'Correspondence Notes from Labrador,' by G. H. von Schubert in 1844 ("Correspondenz Nachrichten aus Labrador," Gelehrte Anzeigen der Bayerischen Akademie der Wissenschaften, Bd. 18, München, 1844), this is the first work in German on ornithological conditions in Labrador.

Not the least point of interest in Hantzsch's Labrador report, as it is of his later Baffin Island work, is the complete list of the native Eskimo names for each species, with their derivation in most cases. The value of such vernacular names is obvious to anyone who has attempted to get accurate information of the occurrence of species from the aborigines. Hantzsch had also a musical ear, and was particularly good at describing bird notes and bird songs. He seems in many cases to enter into the spirit of the bird and its harmony with the surroundings, and in fact many of his passages have a peculiar lyrical beauty of their own.

In a paper of this length time is lacking to go into details of a bird list. A few new records are given for the region, such as Kingbird and Redstart at Port Burwell, but as Hantzsch himself says, "The number of wandering visitors of the kind, which have slight significance for the avifauna of the district, will naturally never be fully exhausted." Of disputed forms, Hantzsch gives detailed descriptions of several specimens of Mandt's Guillemot, which he records as *Cepphus grylle mandtii*, being fully convinced that it is a subspecies of the Black Guillemot, *Cepphus grylle*, and not a distinct species.

He made inquiries about the Great Auk, but could learn nothing from natives or from ruins of old Eskimo houses. He suggests

examining collections of bones from old Eskimo graves, now in museums or being made, for evidences of the occurrence of the Great Auk west of Davis Strait.

As to the Gulls, Glaucous Gulls and others, Hantzsch cautions extreme care in sight identifications, laying especial stress upon the exceptionally strong bleaching influence of the sunlight in the spring when snow and ice are still about. The variations in the size of these northern species of Gulls and Fulmars, he attributes to the extremely variable weather conditions of these inhospitable regions, which influence the breeding affairs of these birds from the laying of the egg to the flight of the young. Gulls may often starve for days at a time when the coast is blocked with ice, but Gulls nesting on bird mountains do not suffer to such an extent as they are able to feed on the eggs and young of other birds. Individual variations as well as inheritance may increase the range of variation still more, and Hantzsch is very sceptical of separations within these species which are based only on slight variations in size.

Of the Greenland Eiders, he notes the considerable proportion of Eider Ducks in a district which have not reached the breeding age, and follows some other ornithologists in assuming that these Ducks do not breed until four or five years of age. Among probable occurrences he mentions the Bernicle Goose, *Branta leucopsis*, a skin of which from northeastern Labrador was offered for sale in Moeschler's catalogue of 1871. This record seems probable, as the National Museum of Canada received a specimen from southern Baffin Island in 1924. Other references to Moeschler, who apparently obtained considerable bird material from German missionaries in Labrador, lead one to suppose that there may be hidden Labrador records in old private collections and the smaller museums of Europe. Hantzsch also quotes from his correspondence several unpublished records of Baffin Island birds in the Marischal College of Aberdeen, collected by Crawford Noble.

Hantzsch's notes are not all prosaic, as for instance his graphic account of hunting Rock Ptarmigan with dog-sled on the fresh snow, or his rhapsody on the White-rumped Sandpiper around the little pools on an autumn evening, where he admires the birds and goes out of his way to avoid disturbing them. Sentiment,

however, does not prevent Hantzsch, who is fully alert to the modern necessity for extensive series in systematic work, from collecting 32 skins of the latter species and examining the contents of 38 stomachs of the same. He adduces further evidence, that like some other shore birds, the White-rumped Sandpiper, the most common migrant Sandpiper, has the migration led by the males, while the females which have brought up young remain a little longer, and still later the young seem to travel alone.

He restricts the name of *Hierofalco gyrfalco islandus* Brünn. to the Iceland bird, and as the Labrador birds, according to Hantzsch, are considerable whiter, he retains for them the name *Hierofalco gyrfalco candicans* (Gm.). He considers the Labrador Redpoll, *Acanthis linaria fuscescens* (Coues) to be a good subspecies, although not recognized by Ridgway nor the A. O. U. 'Check-List.'

Concerning the Rock Ptarmigan, one of the most important birds of the region, Hantzsch considers that records of the subspecies and their geographical distribution are not at all clear, and stresses again the necessity of large series for comparison. As with the Gulls, fading occurs in the strong light, and it is not sufficient to compare summer birds with summer birds, but we should have specimens from the same months and newly-moulted breeding birds from different districts. He does not believe that many of the Greenland Ptarmigan, *Lagopus rupestris reinhardti*, come even to Baffin Island, although different authors give *reinhardti* as inhabiting the northern parts of Labrador northward to Greenland. These statements, he thinks, are due to insufficiently sharp comparison of the birds of the two districts, and to be founded on nothing but theory.

In addition to his work on the birds, Hantzsch published in 1909, 'Contributions to Knowledge of Northeastern Labrador,' in 'Communications of the Geographical Society of Dresden,' giving a detailed description of this little known territory, some information on the geology, and a detailed description of the native population which shows clearly his active interest in the Eskimos as well as the thoroughness and scope of his investigations, the whole forming a valuable monograph on the region.

Having shown his capabilities on the Labrador trip, Hantzsch

finally succeeded in securing the necessary funds to carry out his well-considered plan for a three-years' stay on Baffin Island. Among the prominent contributors were the Society of Friends of Nature Investigation at Berlin (Gesellschaft Naturforschender Freunde zu Berlin), the Rudolf-Virchow-Foundation at Berlin, His Majesty, King Friedrick-August of Saxony, and various Dresden patrons, the sum provided amounting to about 15000 marks, a modest sum for the work planned, but sufficient for Hantzsch to assemble what he considered a satisfactory outfit.

Briefly his plan was to secure two or three Eskimo families in the southeast of Baffin Island, and with these explore Nettilling Lake, the largest lake in the interior of the island, the western parts of which had never been seen by a white man. From there he expected to reach the coast of Fox Channel and after wintering there, proceed northward on the east coast of Fox Channel, spending the third winter with the Eskimos of Fury and Hecla Strait. It was to be left to the future how the north coast of Baffin Island could be reached. The primary purpose of the expedition was to be the investigation of Arctic ornithology, and as his friend Jacobi says, "Concern for this chief object of his expedition repeatedly exercised a deciding influence on the decisions of Hantzsch, and exerted on the course of his journey an influence fatal in many respects. Nevertheless, the fulfillment of his chief purpose led him to undertakings which served geography directly, particularly the investigation of the large unknown area around the shores of Foxe Channel. He had always before him the prospect of filling in a rather large white spot on the map of the earth.

Almost as important to Hantzsch appeared the ethnological study of the natives where they were still in a comparatively primitive condition. His Labrador trip had led him to believe that only a close residence with the natives would give the wished-for results and he arranged to carry out his plans as much as possible with the help of Eskimos, living with them in order to gain their confidence and with that an intimate knowledge of their culture. Lastly, the total sum at his disposal was modest, and Hantzsch considered that this sort of life offered the only guarantee of carrying out his purpose in a satisfactory manner. This idea must

have been epidemic at the time, as the present writer happened to be following a similar illusion in a different quarter simultaneously.

On July 4, 1909, Hantzsch left his home in Dresden for London, preparing to take passage on the Dutch schooner "Janthina Agatha," which was to take supplies to the employes of the whaling station at Kikkerton on Cumberland Sound, on the southeast coast of Baffin Island. The voyage was a disastrous one, as the schooner after consuming nearly two months in making the passage from Dundee, collided with ice in Cumberland Sound on September 26 and sank with most of its cargo. Hantzsch lost the greater part of his provisions and supplies, including his photographic outfit and much of his necessary scientific equipment. It was a staggering blow at the very outset of the expedition, but Hantzsch bravely determined to make the best of it. It might be mentioned here that when news of his plight reached his home, the Geographical Society of Dresden with the help of members and friends, sent some equipment two years later, but Hantzsch was dead before it arrived at Baffin Island.

The crew of the schooner could not be sent home on account of the lateness of the season, and the whole party finally found refuge in the little mission house at Blacklead Island. The winter was spent under very disagreeable conditions due to crowding and shortage of food. Hantzsch carried on natural history work as best he could, and finally persuaded some Eskimos to accompany him into the interior of the island. Leaving the coast April 23, 1910, with great exertion they hauled a small boat across to Nettilling Lake, which they reached June 21. Previous to this time, the only white men who had ever seen the lake were Dr. Franz Boas, the ethnologist, and later William Duval, a resident whaler, and Crawford Noble, owner of the whaling station on Cumberland Sound, who had reached the lake on summer hunting trips. Hantzsch reached Tikkerakdjuak on the south side of the lake on July 3 and remained there until August 15. It should be remembered that Nettilling Lake is not open for navigation until early in August and winter starts in September.

The party suffered many delays on account of heavy storms, but reached the Kokdjuak (the "Great River" draining Nettilling Lake) on August 30, and after many hindrances due to difficult

water, swift currents, shallows, and countless islands, they reached Foxe Channel at the mouth of the river on September 30, Hantzsch thus being the first white man to cross Baffin Island. Great discomfort was caused by the almost total lack of fuel, and much of the food had to be eaten raw, as the party had been obliged to start with an exceedingly small amount of imported food, and they were virtually "living off the country." The writer can speak with feeling and understanding of the disadvantages connected with this method of living, which affords far more opportunities for acquiring culture of a kind than of bringing back more tangible results. Hantzsch was unable to collect large series of small birds on account of scarcity of ammunition, and few large birds on account of their weight and bulk. Fortunately, the species in Baffin Island were few, and usually well-marked, Hantzsch knew his birds well, and he was able to keep full and accurate notes.

Originally he had planned the rest of the journey along the coast by boat, but this proved wholly impracticable, as ice was lining the flat shores for a great distance out, so the party left the boat and pressed farther north where they hoped to find better hunting grounds. They went north about 130 miles with their sleds and established winter quarters, but game conditions were bad, both on land and sea. They procured very few seals, and caribou were virtually absent from the land during the winter months. The best efforts of the Eskimo hunters proved of little effect, and the party was reduced to the direst extremities. From the middle of November until December 18 nothing was killed except two hares. Old tent rings and stone buildings showed that at earlier times the place had been visited by Eskimos, according to the opinion of his companions, the "Tunit," a race without whose rediscovery no orthodox Arctic expedition up to the present time may be considered complete. This absence of animal life corresponds exactly with the conditions met by J. D. Soper in the same region early in 1926.

In early spring a few caribou came back and some were killed. On April 16 a march northward was begun and on May 8, Hantzsch had reached the most northern part of his journey, about 137 miles from the last winter camp and 267 miles north of the Koukd-

juak. On this trip signs of illness began to show on the leader as well as his Eskimo companions, aggravated if not caused primarily by malnutrition. Hantzsch's faithful Eskimos carried him a bit farther on the way home, but conditions became worse and he died about the beginning of June, 1911 and was buried on the shores of Fox Channel. The Eskimos brought out his note-books, journals, and specimens to the missionary Greenshield at Blacklead Island, and they were ultimately received by his friends in Germany. The journals show that Hantzsch kept up his observations until near the end, and had summarized much of his results. Two letters from his Eskimo companions to Greenshield tell the rest of the story and prove their devotion to Hantzsch as a friend. The Eskimo Aggakdjuk finishes naively:

"We made a nice grave of stones and it is in a good place. His body can not be disturbed by foxes or a wolf. We did this too, since we wished to pray to God while we put the body in the grave, we used the prayers to God for the burial of the dead, that he, the Gracious God, would take him up on high. I know certainly, that he is with God, because his faith was sufficient."

The publications on Hantzsch's Baffin Island work were largely posthumous, and we can thank his many friends for putting so much on record. The 'Dresdener Anzeiger' in 1911, published extracts from Hantzsch's letters up to the time of his sled trip to the interior of Baffin Island. For the general accounts we are largely indebted to Jacobi and Rosenmüller. The Geographical Society of Dresden in 1913 published a preliminary report in his memory: "Bernhard Hantzsch and his last Scientific Expedition to Baffinland," by Dr. M. Rosenmüller. A brief account of Hantzsch's life work was given by his friend, Professor Dr. A. Jacobi, Director of the Zoological-Anthropological Museum of Dresden, in 'Journal für Ornithologie,' 1913. Jacobi considered Hantzsch's work on Iceland ornithology as his most important work, with the Labrador work next, but much was expected from the Baffin Island collections. In the same publication is given a short memorial address by Dr. Herman Schalow, author of the classic 'Vögel der Arktis,' at the November, 1913, meeting of the Deutsche Ornithologische Gesellschaft, referring to Hantzsch as a modest, unpretentious friend, of whom ornithology was justified in expecting great things.

As to the technical papers, Dr. Paul Matschie and Dr. Erich Hesse are particularly to be commended for letting Hantzsch's observations speak for themselves, refraining, as Hesse said, from drawing precipitate conclusions from portions of the partial result, which would be least of all the intention of the cautious Hantzsch.

The first technical paper to appear on the Baffin Island work was 'Observations on the Mammals of Baffinland,' by Bernhard Hantzsch, with an introduction by Dr. Paul Matschie, in 'Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin,' 1913. Matschie lauds Hantzsch as a sound investigator and an excellent observer, noting particularly the painstaking, accurate manner with which he supplied every specimen with all the data useful for scientific purposes, and that his journals contain very noteworthy observations on the mammals of Baffin Island, fifteen species being discussed. The notes are published without essential alteration together with several illustrations after drawings by Hantzsch.

The zoological collections from Baffin Island, including mammals, birds, and eggs, are in the possession of the Royal Zoological Museum of Berlin. Hantzsch's early collections in Saxon ornithology are in the Zoological-Anthropological Museum of Dresden, which also took over the zoological-anthropological results of the Labrador trip. The main part of the Icelandic collection was willed to the museum of his native city which had already taken the specimens into its care. An egg collection of European (Slavonian) eggs, which including the northern eggs, numbered 10,000 specimens, was with the exception of the latter, bought by a patron for the Dresden Heimatkundliche Schulmuseum.

The ornithological collection from Baffin Island, being the principal object of the expedition, naturally received the greatest attention. Hantzsch had more or less extended notes on 37 species of birds of Baffin Island, represented by skins or skulls of 34 species, and eggs of 17 species. The total number of skins was 108, and of eggs 675.

These notes were first published under the title of 'Ornithological Journal. Observations during a Journey in Baffinland,' by

Bernhard Hantzsch, in 'Proceedings of the Society of Friends of Nature Investigation at Berlin,' a society with a record of over a century and a half of natural history work. This was a verbatim transcript, with one or two corrections, of Hantzsch's field notes, with a brief introduction by Dr. Anton Reichenow, known to some of our members as an Honorary Fellow of the American Ornithologists' Union. Professor Reichenow states: "The preparation of this collection and the exact notes about each specimen on the accompanying labels, give witness anew of the conscientiousness and the care which the deceased spent upon his work, and of the zeal which filled him in his self-appointed task. . . . Going into greater detail concerning the value of the diary notes, it is sufficient to remark that they concern a land in which ornithological observations have never yet been made."

A thorough systematic and technical study of the Hantzsch material was made later by Dr. Erich Hesse, who compared the specimens with the other material in the Royal Zoological Museum in Berlin, and published the results under the title 'Bernhard Hantzsch's Ornithological Results in Baffinland,' by Dr. Erich Hesse, 'Journal für Ornithologie,' 1915. Hesse republished Hantzsch's field notes in this paper, as he considered them essential as a supplement on the biological side. In addition to this, Hesse added discussions concerning the authenticating specimens, as far as such existed, and transcripts of the labels on the specimens. Some of these concerned labels on specimens collected by Eskimos and others for Hantzsch. Besides his ornithological journal, Hantzsch left behind a separate 'Catalogue of the Birds' Eggs Collected,' in which number, date, locality, weight, and other remarks are contained. This was added to the main part as an appendix, 'Oölogical-nidological Results.' The measurement of the eggs was done in the Museum.

As a further tribute to the memory of the explorer, a Bernhard-Hantzsch-Foundation was established in 1913, partly by a donation of 4000 marks by his parents, brother and sister, and partly from a sum of 1150 marks donated by Hantzsch's friends for his use during the expedition and transferred with their consent to this fund, to be devoted to assisting exploration in geography, natural history, and ethnology, in the North Polar regions by performance

of exploratory journeys and by publication of scientific results. Preference is to be given to candidates of Saxon nationality, and next to subjects of the German Empire.

Hesse sums up the work of Hantzsch on Baffin Island in part as follows: "The gain which science owes to Hantzsch, consists above all in the exploration of the land region hitherto unknown, in the exact observations made there, and in the skins appertaining to them, the information on new breeding grounds, and the biological observations. All this fills a great gap in our knowledge of the geographical distribution of the birds in the huge Arctic North American land-complex, the more so as Baffinland represents an integral, substantial part of the same, not an isolated region, as of other Arctic lands, such as the Spitzbergen archipelago, Iceland, or even Greenland."

Hantzsch alone was in a position to estimate closely the differences in the character of the lands traversed from a faunistic standpoint. The eventual conclusions are unfortunately lost to us. We only deplore that this talented explorer should have been unable to complete his life's work, but the results achieved as original contributions from a land region never before crossed by a white man, will forever remain of lasting value.

### HANTZSCH'S BIBLIOGRAPHY.

1900. "Die Vogelstimme," *Natur and Haus*, Bd. 8, pp. 389–390.
1901. "Die Donauriede," *ibid.*, Bd. 9, pp. 110–112.
1901. "Über die Veränderungen der Eischale," *Zeitschrift für Oölogie*, Bd. 11, pp. 97–100, 113–122.
1902. "Über das Vorkommen von *Locustella fluviatilis* (Wolf) im Königreich Sachsen," *Ornithologische Monatsberichte*, Bd. 10, pp. 165–170.
1902. "Vergiftete Lachmöwen," *ibid.*, Bd. 27, p. 447.
1902. "Beitrag zur Charakterisk und Lebensweise unserer Reiher," *ibid.*, pp. 389–392, 417–420.
1903. "Brutvögel der Gegend von Königswartha (Lausitz)," *Journal für Ornithologie*, Bd. 51, pp. 52–64.
1903. Verzeichnis der im Königreiche Sachsen beobachteten Vogelarten. Hrsg. v. Ornithologischen Verein zu Dresden. 8s.
1904. "*Acanthis linaria islandica* subsp. nov.," *Ornithologische Monatsberichte*, Bd. 12, pp. 32–33.
1904. "Über die Stimmlaute von *Gallinago gallinago* (L.)," *ibid.*, pp. 173–175.

1904. "Die gesetzlichen Vogelschutzbestimmungen und ihre Durchführung, insbesondere im Königsreich Sachsen," *ibid.*, Bd. 29, pp. 99–102.
1905. Beitrag zur Kenntnis der Vogelwelt Islands, Berlin.
1906. "Über das Weichen der Vögel im Fleische," *Ornithologische Monatsberichte*, Bd. 14, pp. 128–130.
1906. "*Corvus corax islandicus* subsp. nov.," *ibid.*, Bd. 14, pp. 130–131.
1907. "Der Durchgang des Felsenschneehuhne, *Lagopus rupestris rupestris* (Gm.), im nordöstlichen Labradors," *Deutsche Jäger-Zeitung*, Bd. 50, pp. 188–190.
1908. "Über das Studium der arktischen Vögel," *Journal für Ornithologie*, Bd. 56, pp. 143–145.
1908. "Beitrag zur Kenntnis der Vogelwelt des nordöstlichen Labradors," *ibid.*, Bd. 56, pp. 177–202, 307–393.
1908. "Über das Anlagen von Vogeleier-Sammlungen," *Natur und Haus*, Bd. 17, pp. 22–25, 38–41.
1909. "Beiträge zur Kenntnis des nordöstlichen Labradors," *Mitteilungen des Vereins für Erdkunde zu Dresden*, 1909, Hefte 8 und 9.
1909. "Bernhard Hantzsch's Notes on Northeastern Labrador," by Robert Stein. *Bulletin* (formerly *Journal of the American Geographical Society*, MDCCCCIX, Vol. XLI, New York. Published by the Society. pp. 566–575. (Review of "Beiträge zur Kenntnis des nordöstlichsten Labradors," von Bernhard Hantzsch. *Mitteilungen des Vereins für Erdkunde zu Dresden.* Heft. 8, Dresden, 1909. pp. 169–229.)
1911. *Dresdener Anzeiger*, Sunday editions, 1911, No. 2, No. 3. (Accounts of Hantzsch's work in Baffin Island up to spring of 1910, from his letters.)
1913. "Bernhard Hantzsch und seine letzte Forschungsreise in Baffinland. Verläufiger Bericht nach den Tagebüchern und sonstigen Aufzeichnungen des Forschers," von Dr. M. Rosenmüller, Dresden. Mit 1 Bilde, sowie 1 Ubersichtskarte, und 3 Detailskizzen nach den Originalkarten Hantzschs. Von Dr. O. Israel, Dresden. *Mitteilungen des Vereins für Erdkunde zu Dresden*, Band I, Heft 7, Abhandlungen 5, 1913, pp. 669–716.
1913. "Satzungen der Bernhard-Hantzsch-Stifnung," *ibid.*, Band II, Heft 7, Abhandlungen 5, 1913, pp. 649–650.
1913. "Stiftnungen und Vermächnisse, 1866–1913," *ibid.* pp. 654–655.
1913. "Bernhard Hantzsch," von A. Jacobi, *Journal für Ornithologie*, 61. Jahrgang, Nr. 1, Januar, 1913, Leipzig. pp. 161–167.
1913. Memorial address delivered by Dr. Herman Schalow at November 4th, 1912, meeting of the Deutsche Ornithologische Gesellschaft, at Berlin. *Ibid.*, pp. 188–189.
1913. "Beobachtungen über die Säugetiere von Baffinsland," von Bernhard Hantzsch, mit einer Einleitung von P. Matschie, *Sitzungsbe-*

*richte der Gesellschaft Naturforschender Freunde zu Berlin*, Jahrgang, 1913, Nr. 2, pp. 141–160, figs. 1–10.

1914. "Ornithologische Tagebuch. Aufzeichnungen während einer Reise in Baffinland," von Bernhard Hantzsch, *ibid.*, Nr. 4, vom 21. April, 1914, pp. 129–165.

1915. "Bernhard Hantzschs ornithologische Ausbeute in Baffinland," von Dr. Erich Hesse, *Journal für Ornithologie*, Dreiundsechzigster Jahrgang, Nr. 2, April, 1915. Leipzig. pp. 137–228.

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# SIGHT AND SCENT IN THE TURKEY VULTURE.

BY JOHN B. LEWIS.

THE article by Alexander H. Leighton in the July number of 'The Auk,' entitled 'The Turkey Vulture's Eyes' was of much interest to me, and called to mind some experiments I have made along similar lines, which may be of interest to others.

January 19, 1927, a large hen that had died the night before was placed in an open field ninety yards from our house, in a spot easily seen from the windows, covered with a burlap bag, and a weather-beaten box placed over all to keep dogs from carrying the carcass away. Either the burlap or the box would have prevented the carcass from being seen, but offered little resistance to the escape of odor. Either Mrs. Lewis or myself kept very close, though not quite continuous watch on the situation until February 21, without seeing a Vulture near the box.

At 10.30 A.M. February 21, the temperature was just above freezing, the sky was clear and a light wind blew from the west. I removed the box and burlap from over the hen, placing the box four feet from the carcass, so that if it had frightened the Vultures away while the hen was concealed, it would do the same when she was exposed to view. After arranging the hen and box I carefully scanned the sky and saw but one Vulture, which was flying low in the southern horizon. I walked to the house, washed my hands and went to the window just in time to see a Vulture alight on the ground fifteen feet from the hen. In less than as many minutes, three others had lit near the first. All four walked cautiously around the carcass and box for some time before venturing to begin the feast. The temperature all through this experiment was low enough that the carcass did not develop a very rank odor.

We might summarize the results of this experiment as follows. A dead hen lay in an open field concealed from sight for four weeks without attracting any apparent attention from the Vultures that sailed across the sky every day. The carcass was then exposed

to view without changing any other of the surroundings, and in less than ten minutes four Vultures lit within 25 feet of it.

July 20, 1927, I placed the carcass of a Barred Terrapin ten and a half inches long under a box in an open field for the double purpose of letting the carrion beetles clean the skeleton, and to learn whether the Vultures would find it when concealed from sight. The top of the box was tight, but there was a half inch crack 11 inches long, on one side, five inches from the ground, and a three-fourths inch knot hole on the other side four inches from the ground.

These should have been stopped, though it is hardly thinkable that a Vulture could have seen the carcass through them without being on the ground near the box. July 24 at 1 P.M. seven Vultures were on and near the box.

December 21, 1927, I shot two stray tom cats that came to our place. The carcass of one was placed in an open field without concealment. The other was placed under a thick, low branching holly tree in the same field, 240 yards from the first. The lower limbs of the holly were far enough from the ground that a Vulture could easily have got at the cat, but effectually concealed it from view, unless from very near the ground. The Vultures found the cat in the open the next day, and were at work at it, trying to get the flesh from under the tough skin, for several days.

The cat beneath the holly attracted no apparent attention from the Vultures for 11 days, when it was carried off during the night, probably by a dog or fox.

At 8:20 A.M. July 15, 1928, the carcass of a freshly killed Opossum (*Didelphys virginiana*), was placed in an open field in view from the windows of my home, and covered with a weather-beaten box that had had all cracks stopped. Twenty-six yards from the box was an old telephone pole, left from an abandoned line. This layout was watched carefully, though not quite continuously, for four days.

At 3:20 P.M. July 16, a Vulture lit near the box, walked up to it and remained eight minutes and then left.

At 9:10 A.M. July 17, two Vultures circled about over the box for four or five minutes and left without alighting.

At 10 A.M. the same day a single Vulture circled over the box

and then left. At 2:35 the same day a single Vulture circled over the box, then lit on the telephone pole where it remained twelve minutes.

At 6:10 A.M. July 18, I removed the box from over the Opossum and placed it four feet from it. Decomposition was now far advanced and many carrion beetles were at work.

Omitting details, between 10 A.M. and 5 P.M. eighteen Vultures came to the carcass, sailing low over it, many alighting on the telephone pole, but only one was seen to alight on it and eat. Two Black Vultures (*Coragyps urubu*) were among the Turkey Vultures on this day.

I failed to go to the carcass of the Opossum early the morning of July 19, to make sure that it had not been devoured by dogs or other mammals during the night, as should have been done, but between 9 and 9:45 A.M. sixteen Vultures, about half of which were Blacks, gathered about the carcass and completely cleaned up whatever may have remained of it.

These experiments seem to indicate that in cold weather when little odor is thrown off, sight is the Vultures' chief means of locating food, but that they have no difficulty in locating it by scent alone, in warm weather when odor is strong.

These observations and others of the author may throw light on a question raised by Dr. Russel M. Kempton, of Centerville, Indiana, in the 'Wilson Bulletin' for September, 1927, as to whether Vultures willingly feed on the carcasses of carnivorous animals. That they will eat such carcasses there can be no doubt, as I have frequently seen them eating the carcasses of dogs and cats. Dr. Frank N. Mallory of Lawrenceville, a careful and trustworthy observer, has also seen them devouring the carcasses of dogs that had been killed by automobiles on the highways. In my own experience most of these cases have occurred in winter when food may have been scarce, and may not prove that they eat the flesh of carnivores from choice.

The experiment described below, however, seems to give a definite answer to the question.

At noon, August 10, 1928, I shot a large, domestic tom cat, split the carcass ventrally so as to open both the thoracic and abdominal cavities, and placed it in an open field, near the place

that had been occupied by the Opossum in the preceding experiment. No attempt at concealment was made.

At 4:20 P.M. the same day a Vulture lit on the old telephone pole but did not go to the carcass.

August 11, at 12:40, a Vulture lit at the carcass and ate ten minutes, after which an examination showed the thoracic cavity cleaned out and the liver and part of the intestines gone.

At 3:25 P.M., the same day, two Vultures came and ate twelve minutes, when a third came and drove them away, after which he ate thirty-two minutes. I watched the last through a six power field glass at a distance of eighty yards. He stood on the carcass with both feet, tearing shreds of flesh from it with much apparent effort, and swallowing them. Several times he stepped off the carcass and seizing it with his bill, thrashed it about violently. During the afternoon two more Vultures came to the carcass and ate. Later an examination showed that the bones had been picked clean, the legs having been skinned back as far as there are any large muscles, and the head skinned past the eyes. All these birds were Turkey Vultures (*Cathartes aura septentrionalis*).

I believe that the fact that Vultures are not strong enough to get through the tough skin of carniverous animals accounts for their sometimes leaving them after having picked out the eyes and tongue, rather than any dislike they have to the flesh.

*Lawrenceville, Va.*

# A REMARKABLE WEST INDIAN GOATSUCKER.

BY JAMES BOND.

*Plate XVI.*

ON the tenth of February, 1917, a small Goatsucker was secured by the well-known collector, Mr. Rollo H. Beck, near the village of Túbano, in the Province of Azura, Santo Domingo, which became the type and only known specimen of a genus new to science—*Microsiphonorhis*, of F. M. Chapman. Further collecting on the island failed to reveal the bird, though Dr. Alexander Wetmore writes me that its remains have since been found in cave deposit material collected near St. Michel de l'Atalaye in Haiti.

Dr. Chapman in his description mentions that the closely related *Siphonorhis* from Jamaica "is now believed to be extinct and the fact that *Microsiphonorhis*, although an inhabitant of the tropical zone of Santo Domingo, has not been taken before, indicates its extreme rarity."

Fortunately, however, this interesting Goatsucker is not as rare as is believed, for during a six months sojourn in the Republic of Haiti, I found it not only a local resident on the mainland, but a distinctly common bird on the island of La Gonave, where it most certainly outnumbered all other night birds.

My acquaintance with this little Nightjar began in February of the present year—1928. I had taken a short excursion into the hills above Pointe-à-Raquettes, on the south coast of Gonave Island, and had put up at a small deserted hut in a ravine, the steep slopes of which were covered by arid scrub and low trees. Just before darkness set in, curious sounds emanated from the woods on either hand—evidently Nightjars, and probably, I thought, the little-known *Microsiphonorhis!* All attempts to find the bird failed, and it was not until my second trip to the island, in May, that I was able to secure specimens. On this occasion I arrived equipped with a powerful flashlight which I had brought with me to Haiti on the chance of encountering Goatsuckers. With this I intended to "jack" the birds. However, this method was doomed to failure, partly on account of the difficulty of clambering up the steep slopes of the ravine at night, but principally because the birds were constantly on the move.

I then secured a competent native and combed the neighborhood during the daytime. This proved successful and a nice series was secured. On this occasion and in June, when I visited the island for a third time, I was much aided by the fact that the natives had burned considerable areas of scrub, thereby restricting the birds to comparatively small strips of woodland.

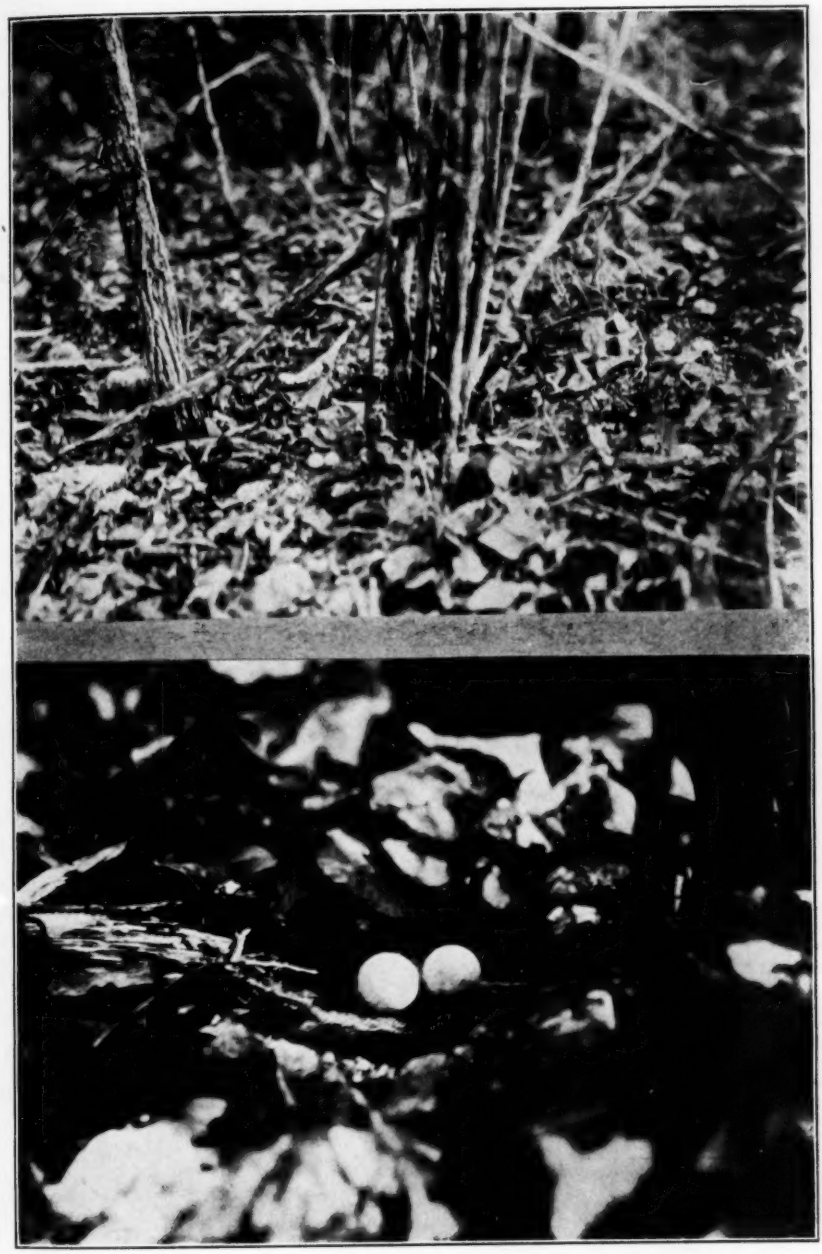
The skins show considerable variation in color. Some are in a rufous phase, while others are very much darker, the rufous or cinnamon markings being much restricted. Still others are intermediate, as is the type taken by Beck. Moreover, there are marked differences in the size of the nasal tubes, both in life and in the dried skin. They vary in dried skins from 1.5 to 2 millimeters in length. There is also some variation in the strength of the rictal bristles. These conditions appear to be irrespective of sex, age, or season.

I have not, as yet, had access to any skins of the extinct *Siphonorhis* for comparison, but it will be noticed that certain of the characters separating the two genera are not constant, and it seems probable that in future the two birds will be considered congeneric.

There appears to be little, if any, difference in size between the sexes. The average length of wing of four females is 114.5 mm., four males—114.4 mm. The average length of the tail of four females is 110.5 mm., of four males—111.3 mm.

The males, however, can be readily distinguished in series, as they are considerably darker, both above and below, than the females. The black streaks on the crown are bolder, the black vermiculations on the underparts more extensive, and the ochraceous-buff markings darker and more rust colored.

Two young, of indeterminate sex, have the underparts grayish-buff faintly barred with dark gray and vermiculated with ochraceous on the upper breast. The streaks on the crown are more "drop-shaped" and are margined with rusty brown, somewhat darker than the ochraceous-tawny of the adults. The subterminal band and bars on the tail feathers are darker brown. A third immature, a female, is very dark and resembles the adult male, but retains the "drop-like" crown markings and the dark barring of the tail feathers, and has the ochraceous-buff of the breast finely speckled with black.



Photos by J. Bond

NESTING SITE, AND EGGS OF MICROSIPHONORHIS, GONAVE ISLAND, HAITI.

The first specimen of *Microsiphonorhis* that I secured was a female which was about to lay. Two days later one was flushed from the nest. The eggs were placed in a slight hollow formed by the bird, on the top of a narrow ridge at the edge of burnt land, and I secured the female (Acad. Nat. Sci. Phila. 82275). On June 27 a native brought me a second set. The eggs of *Microsiphonorhis* are very different from those of the apparently closely related *Nyctidromus*, the "parauque" of the mainland of South and Central America. In the set taken May 16 the background is dull white with rather evenly distributed markings of pale violet-gray and numerous buff or pale brown spots or scrawls.

The eggs of the second set are more oval, and less eliptical. The violet-gray markings are brighter and are restricted to the larger end. They also lack the brownish-buff spots. The first set measures in milimeters: 23.5 x 17.5: 24 x 17.5 and the second 23 x 17.5: 25 x 19.

I usually found *Microsiphonorhis* perched lengthwise on a horizontal branch of a bush, from one to five feet above the ground. The protective coloring of the birds, combined with their immobility, made them exceedingly difficult to make out. Occasionally, however, I flushed them from the ground, on which occasions, they would flit a short distance through the scrub like large moths and either settle again on the ground, or, as frequently happened, would fly up into a nearby bush like some passerine! It will thus be seen that the bird once found, was not difficult to collect and in fact in no case did I fail to secure a bird which I had followed up.

In May and June, which is evidently their breeding season, the little Goatsucker is more noisy at night, and at times I heard it during the day! The notes may be described as half croaks, half whispers, and can be recalled by the syllables *gu-eck*, sometimes followed by a drawn-out *goo-ré-caw*, with the accent on the *ré*. The bird also emits at times a clear rising whistle, which reminded me forcibly of a Canada Jay.

Partly because of its note, partly because of its habit, typical of the family, of quivering its wings when flushed from the nest, the little Goatsucker is known to the natives as the "Grouillé-corps," or "shaking-body."

Though *Microsiphonorhis* is common on Gonave, it is distinctly rare and local on the mainland of Haiti where I came across it in a hot, arid district near Magasin Caries, a small settlement between St. Mark and Port-au-Prince. Here it was found in small numbers at sea-level. I heard, on several occasions, the unmistakable notes of the bird but was unable to secure a specimen.

Its abundance on Gonave Island is interesting but not entirely unexpected. The whole balance of bird life there is very different from that of the mainland, due, I believe, to the absence, or at least rarity, of many well-known Haitian birds. The Piculet, *Nesoctites*, is far more numerous on Gonave than on the mainland, and it seemed to me significant that during the entire time I spent on the island I never saw the much larger *Chryserpes*, which is abundant in Haiti! Likewise, *Lawrencia*, the little flat-billed Vireo, though of wide distribution in Haiti, is far more common on Gonave. Never on the mainland did I find the Tanagers *Spindalis* and *Calyptophilus* at sea-level, nor *Phoenicophilus* so abundant. Cannot this be due to the absence of Crows, which could so easily locate the nests of these birds in the open scrub? And cannot the apparent absence of *Tyto*, *Speotyto*, and *Chordeiles*, result in such rare birds as *Asio noctipetens*, *Nyctibius* and *Microsiphonorhis* becoming the dominant night birds of the island? It is impossible to say. But it is, I think, apparent that Gonave, hitherto rather ignored ornithologically, is a most interesting island, far more so than Tortuga, which has, despite its proximity to Haiti, a Bahaman element in its fauna and flora, and apparently lacks all the endemic Hispaniola genera as well as many common mainland species, including the Tody.

Finally, a word of warning! When the Mongoose was brought to Jamaica, *Siphonorhis* disappeared rapidly. The Mongoose has now been introduced into the Dominican Republic. Will *Microsiphonorhis* also go? Perhaps; but let us hope that the island of La Gonave, apparently so favorable to the abundance of the bird, will prove an effective sanctuary for this remarkable little Goatsucker for all time.

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# A FURTHER STUDY OF THE HOME LIFE OF THE NORTHERN PARULA WARBLER (COMPSOTHLYPIS AMERICANA USNEAE) 1925.[1]

BY HENRY MOUSLEY.

It would seem as though the fates were against me, for this, the third attempt to complete the study of the home life of this charming little Warbler, has again been only partially successful, the same as was the case with the previous ones in July 1921, and May 1924, both of which have been recorded in the April numbers of 'The Auk' for 1924, and 1926. However, the present study made in May 1925, has been full of interesting incidents, although, like the previous one in May 1924, it deals only with the construction of the nest, the birds apparently forsaking it after completion, owing, no doubt, to three days continuous rain.

As, with the previous nests, this one was located at Hatley, Que. in the same wood, and within eighty yards of that of 1924. It was discovered on May 22, by having watched and followed up the movements of the male—on the two preceding days—who, by repeatedly coming back to one particular little birch tree in a rather open spot, eventually led to my discovery of the nest, twenty-nine feet up in the drooping bough of a dead balsam fir. The nesting tree was just eleven yards from a little birch, which, with a small willow discovered later on, formed the two principle "singing trees" of the male. As regards the nest, there seemed to be no question of its having been commenced on the very day (May 22) I discovered it. In most respects, it resembled the one of 1924, with the exception, that the long streamer of usnea which hung on the left hand side of it, was eventually incorporated into the general structure, whereas, in the former case, this was not so, as explained, and shown in the plate accompanying my article in 'The Auk' for April 1926. Few people realize the lightness of these lovely little nests, the one just referred to in 'The Auk,' weighing 338 grains only, or .77 of an ounce, including the twigs

[1] Read before the American Ornithologists' Union, Ottawa, October 13, 1926.

and bunch of usnea to which it was attached, whilst, the present one, weighed 100 grains only, or .23 of an ounce! It was beautifully symmetrical, being composed entirely of usnea, with a few very fine grass stems to strengthen it, the lining consisting of some black hair-like rootlets, with two bits of plant down, the dimensions being as follows viz: Outside diameter 3.25, inside 1.75 inches; outside depth 2.50, inside 1.75 inches. The female after selecting some of the longest threads of the hanging bunch of usnea, attached them to a little twig a few inches off, following this up with that curious process—inherent—of moulding the nest, which in this case, was really an acrobatic performance, there being of course no apparent nest to mould, just a few strands, through which the bird's tail and wings protruded. The tenacity of a thread of usnea lichen must be immense for these few to have supported the weight of the bird at all, especially, as it turned round and round in the moulding process.

During the time I was at the nest from 8:15 A.M. to 11 A.M., the female brought sixteen loads of building material, whilst the male sang twenty-five times. On one occasion, he entered the nest, giving vent to a long twitter of satisfaction, and twice drove off males of other species who had ventured too near his preserves, one being a male Black and White Warbler (*Mniotilta varia*), and the other a Blackburnian Warbler (*Dendroica fusca*). On the following day May 23, it was very cold, and neither of the birds was seen during the time I was at the nest from 1:30 P.M. to 3 P.M. The next day I visited the site in the morning, and during the three hours I spent with the birds, the female brought twenty-seven loads of material, whilst, the male sang on twenty-seven occasions, the rate never exceeding five times to the minute. On one occasion, he fed his partner whilst she was at the nest, and again drove off the male Blackburnian Warbler, who, I think, had a nest somewhere in the immediate neighborhood. Once again, he entered the nest, bringing no material, however, but turned round in it, and then left and sang. The following day, the 25th, nothing very interesting took place, except, that on one occasion the male—who had arrived with his partner—perched below the nest, whilst she was in it.

The next day, however, the 26th, things were very brisk, the

female bringing thirty-one loads of material, whilst, the exuberance of the male caused him to sing on 169 occasions, on one of which, having entered the nest, he so far forgot himself on coming out, as to actually sing on a little bough, just under it. Once again, towards the end of my three hours vigil, he entered the nest, but on this occasion he only turned round in it—and then went off. Nothing unusual occurred the following day, although the male on two occasions, went with his partner to the nest, and on another, entered it, but did not repeat his blunder of the day before. The female chipped twenty times on arriving at, and seventeen times on leaving the nest, this inherent habit being more noticeable when the young are hatched, than in the earlier stages of the home life, nevertheless, the force of habit "will out" at all times—apparently. The two following days, the 28th, and 29th, were very busy ones, more especially for the female, as she brought sixty-nine loads of material in the two and one-half hours I was at the nest in the mornings, or at the rate of one load about every two minutes.

On one occasion, she preened her feathers whilst perched on a little twig just under the nest. The male sang on sixty occasions, the song in a few cases only, being repeated six times to the minute, which seems unusual with this species, the number more often not exceeding five to the minute. In the case of the Yellow Warbler (*Dendroica aestiva aestiva*) mentioned in 'The Auk,' for April 1926—who sang one thousand eight hundred times in the twenty-nine hours I was at the nest—he never repeated the song more than six times to the minute, but this was of very common occurrence. In the afternoon of the 29th, the male was again very busy, singing no less than twenty times out of forty-eight from a little willow, from which the nest could not be seen, nor could I see him either, although, I had often heard him in that direction before. This aroused my curiosity, and I determined to find out the reason for his partiality for this little tree, which, next to the birch, formed his principal "singing tree." The cause was immediately apparent, the supply of little flies on the catkins of this willow. It reminded me of the case of the male Redstart (*Setophaga ruticilla*) described in 'The Auk,' for April 1924, who had two principal "singing trees," one a beech, four yards from the nest, the other

a hemlock, ten yards away, in which latter, he seemed to gather most of his food, not only for himself, but his brood also. Probably, the male Parula, in like fashion, would have gathered most of his food for his family, from the little willow. On the 30th, he was again in exuberant spirits, for he sang on eighty-three occasions, no doubt caused by the apparent drawing to a close of building operations.

As, on the 26th, he once again "gave the show away," by singing directly under the nest, after he had entered, and come out of it again. Certainly, as on the previous occasion, he rendered the song—once only. May the 31st, saw the completion of the nest, so far as I was able to judge, for out of the three hours I was at the site in the morning, the female only visited it once, and that, ten minutes after my arrival. In the afternoon, I did not see her at all, although, the male entered the nest once, and then sang in a nearby tree.

Up to this point, every thing had progressed favourably, and I could hardly imagine things going wrong for the third time. But so it was, for late in the afternoon of the above day, it commenced to rain heavily, and for the next three days it literally poured every morning, and was not much better in the afternoons, and I can only assume that this state of affairs was the cause of the birds abandoning their nest, for when I visited it again, on June 8, there were no eggs in it, and neither of the birds was anywhere about. Thus ended my third, and possibly my last opportunity—as I have now left Hatley—of again attempting a complete study of the home life of these interesting little Warblers.

As, in the case of my previous studies, I have prepared a table summarizing the principal happenings at this nest, from which it appears the male sang 549 times, and the female brought building material to the nest 206 times—during the twenty-four hours I spent with them—or at the rate of one load every 5.4 minutes, the male rendering no help, whatever, in this connection, except, by way of singing to encourage his mate. Comparing these figures with those of last year, I find the female in that case brought 221 loads to the nest in seventeen hours, or at the rate of one load every 4.6 minutes, whilst, the male sang 111 times only, a great falling off as compared with the activities of this one. The

TABLE OF SUMMARIES.

| *Species* | *Period of Observation* | *Hours* | *Times Male Sang* | *Loads of Nesting material brought by female* | *Rate of delivery of nesting material in minutes, once in* | *Remarks.* |
|---|---|---|---|---|---|---|
| Northern Parula Warbler | May 22–31 | 24 | 549 | 206 | 5.4 | Female chipped 49 times on arrival at, and 26 on departure from nest. |

chipping of the female on arrival at, and departure from the nest was also less, sixteen times for the former, and six for the latter, as against forty-nine, and twenty-six respectively, for this year. The male sang once in the nesting tree last year, and twice in the present instance, a total of three times only out of the 660 that the song was rendered, which goes to prove how very uncommon the event is.

In conclusion, my best thanks are due to Mr. P. A. Taverner, who has made it possible for me to obtain the beautiful photographs of this, and the other nests appearing in 'The Auk,' all of which have been taken by the Geological Survey, Ottawa.

*469 Harvard Ave., Montreal.*

# BIRDS OBSERVED IN JAMAICA DURING THE SUMMER OF 1926.

BY STUART T. DANFORTH.

DURING the summer of 1926, the author spent about six weeks (from July 8 to August 18) on the island of Jamaica, most of this time being devoted to ornithological field work. The period from July 8 to 23 was spent in the Kingston region. From July 23 to August 6 I stayed with Mr. Perkins and his family at their cattle and banana estate "Lumsden," which is situated some six miles from Claremont, in a sparsely settled part of St. Ann's Parish, at an altitude of about 1700 feet. Tree ferns grew there, and it was there that I found most of the endemic species of birds. From August 7 to 16 I worked in the Black River region. This is an area of extensive mangrove swamps and logwood forests; and at Hodges, less than 10 miles away, there are a few fresh water ponds which were rich in bird life. Shorter visits were made to Baron Hill Estate, near Jackson Town, and to Duncan's Bay, both in Trelawney Parish, and to Mandeville in Manchester Parish, where I met Mr. E. Stuart Panton, the eminent local naturalist. Thus it will be seen that most of my work was in the western half of the island, which has been rather generally neglected by most of the naturalists who have visited the island in recent years.

I am greatly indebted to many people in Jamaica for information and assistance of various kinds, especially to Mr. Frank Cundall, Secretary of the Institute of Jamaica; Miss Lilly G. Perkins of "Lumsden"; Mr. E. Stuart Panton of Mandeville, and Mr. Geo. R. Smith of Malvern.

An annotated list of the species observed follows.

1. **Colymbus dominicus dominicus** Linn. LEAST GREBE.—A pair was observed on a small cattle pond near Jackson Town on August 3, and about forty at some ponds near Hodges on August 9. One nest on which a bird was incubating was located there, built up from the muddy bottom in very shallow water.

2. **Podilymbus podiceps antillarum** Bangs. ANTILLEAN PIED-BILLED GREBE.—Apparently much less common than the Least Grebe.

An individual was seen on two occasions in a quiet part of the Río Cobre at Bog Walk, and one on Long Pond, near Hodges.

3. **Pelecanus occidentalis** Linn. BROWN PELICAN.—Observed in considerable numbers on some small mangrove keys off Port Royal. Smaller numbers were noted along the coast at Kingston, Duncan's Bay, and Black River.

4. **Fregata magnificens** Mathews. MAN-O-WAR BIRD.—Observed on several occasions at Port Royal, Kingston and Black River.

5. **Florida caerulea caerulescens** Latham. LITTLE BLUE HERON.—The commonest Heron observed, but it is apparently much less abundant than in Porto Rico. It was observed only at Port Royal, Kingston and Black River, always in or near mangrove swamps.

6. **Hydranassa tricolor ruficollis** Gosse. LOUISIANA HERON.—One was observed on the Palisadoes near Port Royal, and the species was quite common at some brackish ponds surrounded by mangroves near Black River.

7. **Butorides virescens maculatus** Boddaert. WEST INDIAN GREEN HERON.—Not nearly as common as in other West Indian islands with which I am familiar. Individuals were noted at Port Royal, Bushy Park, May Pen, Appleton and Black River.

8. **Nyctanassa violacea jamaicensis** Gmelin. WEST INDIAN YELLOW CROWNED NIGHT HERON.—A few noted in mangrove swamps near Kingston and at Duncan's Bay.

9. **Nycticorax nycticorax naevius** Boddaert. BLACK-CROWNED NIGHT HERON.—Six adults observed in some extensive cattail marshes bordering the lower part of the Black River on August 12 apparently constitute the first Jamaican record for this species since the times of Gosse and March.

10. **Ixobrychus exilis exilis** Gmelin. LEAST BITTERN.—A male was collected in some cattails along the Black River on August 12. Its stomach contained two large minnows.

[**Erismatura jamaicensis** Gmelin.] RUDDY DUCK.—One of the principal objects of my visit to Jamaica was to search for the Ruddy Duck in an effort to determine its status there, and its relationship to North American and Porto Rican forms. I was not successful in discovering any, but Mr. Geo. R. Smith of Malvern describes to me a duck locally known as the Rubber Duck or Diving Teal which is apparently the Ruddy Duck. He says they are plentiful at the Pedro Ponds (which illness prevented me from visiting), that they are not migrant, and that he has found nests with eggs, and has seen as many as 14 young following the two parents.

11. **Nomonyx dominicus** Linn. MASKED DUCK.—On August 9 a flock of five was noted at a small woodland pond near Hodges. Upon being approached they swam quickly with startled peeps, and disappeared in a bed of rushes from which they refused to be driven out.

12. **Cathartes aura aura** Linn. SOUTHERN TURKEY VULTURE.—Common at all points visited.

13. **Buteo borealis jamaicensis** Gmelin. WEST INDIAN RED-TAILED HAWK.—Fairly common. Observed at Hope Gardens, Constant Spring, Lumsden, and Bushy Park.

14. **Rallus longirostris caribaeus** Ridgway. JAMAICAN CLAPPER RAIL.—Common in the mangrove swamps on the Palisadoes, near Kingston.

15. **Gallinula chloropus subsp.** FLORIDA GALLINULE.—Common at some small fresh water ponds near Hodges on August 9. A few were also observed in mangrove swamps near Black River.

16. **Fulica americana grenadensis** Riley. WEST INDIAN COOT.—"White-capped Coot." The only Coots I observed in Jamaica were one pair swimming among the weeds on Long Pond, near Hodges, on August 9. Both of these birds were collected. Instead of being *F. caribaea*, which I had been led to believe Coots from Jamaica would be, they proved to belong to some form of *F. americana*. After examining available specimens and literature I have come to the conclusion that these specimens come nearer to the form which Riley described from Isle de Rhonde, Grenada, than to any other described form. They agree almost identically in measurements with his type (which was a female) and also in having a more swollen frontal shield than specimens of *F. a. americana*. The measurements are as follows (expressed in millimeters):

| | *Wing* | *Tail* | *Culmen with frontal shield* | *Depth of bill at base* |
|---|---|---|---|---|
| 6 ♀ *F. a. americana* (from Riley) | 177 | 50.3 | 42.7 | 13.5 |
| 1 ♀ *F. a. grenadensis* (Riley's type) | 184.5 | 47.5 | 50.5 | 17.5 |
| 1 ♀ *F. a. grenadensis* (Jamaica) | 184 | 47 | 46 | 16 |
| 1 ♂ *F. a. grenadensis* (Jamaica) | 185 | 46 | 48 | 18 |

The iris of the Jamaican birds was bright fiery red; bill white with a subterminal dark red spot on the mandible and two on the maxilla, the color in front of these red spots being bluish green; fleshy frontal shield white anteriorly, dark red posteriorly, the larger portion being red. The female had reddish garters just below the feathered part of the legs, which the maled lacked.

The stomach contents of these birds consisted of green algae together with a few *Persicaria* seeds, mixed with a generous quantity of sand for grinding.

Apparently migrant Coots also occur in Jamaica, as Mr. Geo. R. Smith of Malvern, a local naturalist who is especially familiar with the waterfowl, writes me that at the Pedro Ponds the Coot is distinctly a migrant, and that he does not look for them until November.

17. **Jacana spinosa violacea** Cory. WEST INDIAN JAÇANA.—The

Jaçana was common at fresh water ponds near Hodges. A few were seen in the cattails and water hyacinths along the Black River, and one in a flooded grassy field at Appleton. A female was collected at Hodges on August 9. Its stomach contained only insects, with the exception of some very coarse white sand amounting to 20 per cent of the total contents.

18. **Oxyechus vociferus rubidus** Riley. ANTILLEAN KILLDEER.—Noted only at Hodges on August 9.

19. **Pagolla wilsonia rufinucha** Ridgway. RUFOUS-NAPED PLOVER.—Common on sandy beaches and shallow salt marshes at Duncan's Bay and Black River. A female was collected August 3 at Duncan's Bay. Its stomach contained small pieces of shell and beetles.

20. **Arenaria interpres morinella** Linn. RUDDY TURNSTONE.—11 noted at Duncan's Bay on August 3.

21. **Pisobia minutilla** Vieillot. LEAST SANDPIPER.—Eight observed at fresh water ponds near Hodges on August 9, and a few at salt ponds near Black River on August 13. A male was collected at Hodges.

22. **Calidris alba rubida** Gmelin. SANDERLING.—A flock of three was found feeding along a sandy beach at Black River on August 13. A male was collected from this flock, and is now in my collection. The occurrence of this species so far south at this season seems worthy of note. Gundlach stated that he obtained a few in Cuba in September, but Dr. Barbour in his 'Birds of Cuba' (p. 66) seemed to rather doubt this statement, saying that the Sanderlings have not reached the coast of Massachusetts by September. It is probable that some of the birds have a direct migration route from Canada to the West Indies, avoiding the coast of the United States.

23. **Neoglottis melanoleucus** Gmelin. GREATER YELLOW-LEGS.—One observed in a shallow salt marsh at Duncan's Bay on August 3, and a few at Black River on August 13.

24. **Neoglottis flavipes** Gmelin. LESSER YELLOW-LEGS.—Four seen August 9 at a fresh water pond near Hodges.

25. **Tringa solitaria solitaria** Wilson. SOLITARY SANDPIPER.—Ten observed at fresh water ponds near Hodges on August 9.

26. **Actitis macularia** Linn. SPOTTED SANDPIPER.—Observed at Duncan's Bay on August 3, and at Black River on August 11 and 12. Miss Lilly G. Perkins tells me that in May, 1926, at Bush Key, Falmouth, she, in company with others, found a nest of this species containing three eggs on the sandy beach. She distinctly noted the spotted breast of the incubating bird, which feigned lame.

27. **Himantopus mexicanus** Müller. BLACK-NECKED STILT.—Five were seen at some salt ponds near Black River on August 13. They did not appear to be breeding.

28. **Sterna maxima** Boddaert. ROYAL TERN.—Two noted in Kingston Harbor on August 18.

29. **Sterna sandvicensis acuflavida** Cabot. CABOT'S TERN.—A few noted in Kingston Harbor on July 14 and August 18.

30. **Sterna dougali dougali** Montagu. ROSEATE TERN.—Twenty seen in Kingston Harbor on July 14.

31. **Sterna fuscata fuscata** Linn. SOOTY TERN.—Three were noted off the coast of the southeastern corner of Jamaica on July 8, and a few in Kingston Harbor on July 14.

32. **Sterna anaetheta recognita** Mathews. BRIDLED TERN.—About 20 noted in Kingston Harbor on July 14.

33. **Columba leucocephala** Linn. BALD-PATE PIGEON.—Noted occasionally in July and August in the hills near Lumsden, Mandeville, and Williamsfield. Numbers came at night to roost in the mangroves along the Black River.

34. **Zenaida zenaida zenaida** Bonaparte. PEA DOVE.—A common species near the coast, less common in the hilly interior. Noted at Kingston, Constant Spring, Lumsden, Jackson Town, Williamsfield, Ipswich, and Black River.

35. **Melopelia asiatica asiatica** Linn. WHITE-WINGED DOVE.—A common species in the vicinity of Kingston, frequenting especially the vicinity of the mangrove swamps. Its loud explosive cooing was a characteristic sound of these regions. A few were also noted at Duncan's Bay. On July 14 I located four nests, some with eggs and others with young, in the dense growth of shrubby trees on the sandy spit of land known as the Palisadoes, across the bay from Kingston. These nests were situated at heights of from 12 to 20 feet in lignum vitae and other trees. They were very frail structures, even for a Dove. One of these nests contained one egg and one new hatched young. The egg measured 31x25 millimeters. The entire body of the young bird was uniform slaty blue, including the bill. It had a sparse covering of light brown down.

36. **Chaemepelia passerina jamaicensis** Maynard. JAMAICAN GROUND DOVE.—A common species, especially in the lowlands, but seen at all points visited. A female was collected at Black River on August 12. Its iris was of a dirty yellowish color. The bill was also a dirty yellowish, becoming dusky at the tip.

37. **Leptotila jamaicensis jamaicensis** Linn. WHITE-BELLIED DOVE.—I found this handsome and peculiar species far from rare in dense wooded thickets near the sea at Duncan's Bay, and especially in the logwood growths in the Black River region. The only ones seen in the hills were a pair near Constant Spring. A female was collected at Black River on August 11. Its stomach contained hard black seeds. Some coarse quartz gravel was also found.

38. **Oreopeleia montana** Linn. RUDDY QUAIL DOVE.—Apparently very scarce. The only one observed was a female at Lumsden on July 30.

39. **Geotrygon versicolor** Lafresnaye. CRESTED QUAIL DOVE.—

According to the accounts of residents of the island, this fine species is on the verge of extinction. On August 3, I flushed a bird on a wild wooded hill near Jackson Town which was almost undoubtedly this species.

40. **Amazona collaria** Linn. YELLOW-BILLED PARROT.—Small flocks of Yellow-billed Parrots were observed frequently on the wilder wooded hills near Lumsden during my stay there. Residents of the region say that this species is still fairly common, but that *A. agilis* is very nearly extinct. All of the larger Parrots that I saw closely enough to positively identify were *collaria*. The largest number observed in any one day was sixteen. During June and July negroes frequently take young birds from holes in trees to be sold as cage birds.

41. **Eupsittula nana** Vigors. JAMAICAN PAROQUET.—Paroquets were abundant at Lumsden and Jackson Town during my stay, but were not seen elsewhere. They occurred in large flocks and showed a marked predilection for guava trees. While flying they uttered shrill screeching sounds. They are said to be serious enemies of corn planters by reason of breaking open many ears and eating only a few kernels out of each. Flocks came close to the house at Lumsden, and could be observed at leisure from the dining room window. Miss Perkins says, however, that they are of somewhat irregular abundance, which may account for the fact that until now they have apparently not been observed by any naturalist since March, who published in 1863. The stomach contents of two females collected consisted mainly of the pulp and seeds of guava fruits. The iris of one was orange, of the other brownish yellow.

42. **Coccyzus minor nesiotes** Cabanis. MANGROVE CUCKOO.—Observed only on the Palisadoes, across the bay from Kingston.

43. **Hyetornis pluvialis** Gmelin. RAIN-BIRD.—An individual shot near Lumsden on July 24 was the only one seen.

44. **Saurothera vetula** Linn. OLD MAN BIRD.—Seen on six occasions near Lumsden. The female of a pair was collected on July 27. Its stomach contained a large green lizard (*Anolis garmani*), and a few beetles.

45. **Crotophaga ani** Linn. ANI. SAVANNA BLACKBIRD.—Common. Seen at all localities visited. Miss Perkins reported seeing an almost completely albino individual in a flock near Brown's Town on two occasions during the summer.

46. **Tyto perlata furcata** Temminck. WHITE-WINGED BARN OWL.—"White Owl." A common resident in suitable localities, usually seen at dusk hunting rats in canefields. Seen at Duncan's and Clark's Town.

47. **Nyctibius griseus jamaicensis** Gmelin. POTOO.—On July 15, I observed a Potoo sleeping by day on a dead mango stub at Hope Gardens. It was perched in an upright position with its bill pointed upwards and its eyes closed. I sent a negro boy up to try to catch the bird alive, but it flew just as he was about to grab it, and alighted on the trunk of another tree in a vertical position like a Woodpecker. On being scared from that

it alighted *crosswise* on a branch of another tree. Thereupon the boy threw a mango at it and it dropped dead. It proved to be a male in the process of molt. Its brain cavity was extremely small (only 12x14x5 millimeters). Its stomach contained nothing but insects, mostly beetles.

48. **Chordeiles minor gundlachii** Lawrence. WEST INDIAN NIGHTHAWK.—"Piramidig." Common near Kingston, and at Lumsden, Jackson Town and Black River.

49. **Nephoecetes niger niger** Gmelin. BLACK SWIFT.—Seen only at Hope Gardens and Constant Spring in July, flying overhead just before dusk.

50. **Streptoprocne zonaris pallidifrons** Hartert. RINGED SWIFT.—A small flock seen at Constant Spring on July 13, flying in company with a few Black Swifts just before dusk. Two Swifts seen at Lumsden on July 29 may have been this species.

51. **Tachornis phoenicobia phoenicobia** Gosse. PALM SWIFT.—Abundant in the Kingston region, where colonies were noted nesting in palms across the street from the United Fruit Co. office, in the yard of the East Street Building of the Church of England, and in the park near the "Parade." Large colonies were also noted nesting in palms near the railway station at Appleton and along the beach east of Black River. At Lumsden only occasional individuals were seen.

52. **Mellisuga minima** Linn. VERVAIN or BEE HUMMINGBIRD.—At Kingston these birds, supposed to be the smallest in the world, were occasionally seen around blossoming flamboyan trees. At Lumsden I saw the species on only two occasions. At Jackson Town it was fairly common, frequenting low growing Blue Vervain flowers in open fields. At Black River it was common in the tops of blossoming tamarind trees, where the birds could be located by their metallic chittering, very loud for the size of the bird. Three specimens were collected. Their stomachs were apparently empty, indicating that they feed largely on nectar. The average length (in the flesh) of the birds collected was 68 millimeters.

53. **Anthracothorax mango** Linn. JAMAICAN MANGO HUMMINGBIRD.—Common and widely distributed. In the banana plantations they were very fond of probing the blossom buds for insects. The stomach contents of two birds consisted entirely of minute insects.

54. **Aithurus polytmus** Linn. LONG-TAILED HUMMINGBIRD.—Common in all parts of the island visited. A series of specimens in various plumages was obtained. Adult males with the long tail feathers were seen much less frequently than females and immature males. All the male *Aithurus* collected or seen, whether on the north or the south side of the island, were of the red-billed variety, and Miss Perkins, who has lived most of her life in various localities in the northern part of the island, tells me that she cannot definitely remember ever seeing a black-billed individual. These facts led me to doubt the validity of *A. scitulus* even before a talk I had with Mr. Panton in which he stated that he did

not believe *scitulus* to be distinct. If it is distinct, it certainly does not occur at all commonly along the north coast in St. Ann's and Trelawney, where I found *polytmus* to be very common.

55. **Todus todus** Linn. JAMAICAN TODY. "ROBIN."—Fairly common at Lumsden, and a few observed at Jackson Town, Mandeville and Hodges. The stomachs of two obtained at Lumsden contained mostly insects, of which Chrysomelid beetles formed a large proportion, and a cuckoo hopper was also identified. One stomach also contained a number of small seeds. Mr. McIntyre of Claremont told me of a pair nesting in a wooden flower pot near his house. The birds entered through a round hole in the side of the pot, and made a tunnel through the earth to the opposite side where the eggs were laid.

56. **Megaceryle alcyon alcyon** Linn. BELTED KINGFISHER.—One observed in the mangroves along the Black River August 12.

57. **Centurus radiolatus** Wagler. JAMAICAN WOODPECKER.—Common at Lumsden, Jackson Town, Mandeville and Black River, but not observed in the Kingston region. In the field they were seen on the fruit of *Ficus* sp. Two stomachs contained seeds, fibers of some fruit, and a few small beetles.

58. **Tyrannus curvirostris curvirostris** Hermann. GRAY KINGBIRD.—Common at all points visited. Young observed on the wing July 10. Other birds were nest building as late as July 28.

59. **Tomarchus jamaicensis** Chapman. JAMAICAN PETCHARY. "LOGGERHEAD."—Abundant at all places visited except in the immediate vicinity of Kingston. More common than the Gray Kingbird, and apparently much more abundant than the Petcharies of either Cuba or Porto Rico. On July 10 a nest was found with young nearly ready to fly. The nest was on a horizontal branch at a height of forty-five feet from the ground. Two stomachs contained 60 per cent of animal matter and 40 per cent of vegetable. The latter consisted of the fruit of *Solanum* and other berries, while the animal matter was mainly grasshoppers, crickets and fleabeetles.

60. **Myiarchus stolidus** Gosse. TOM-FOOL.—Observed only in close proximity to the sea, on the Palisadoes and at Black River, where it was found in the low moist logwood lands. The stomach of one collected there contained two large caterpillars and two Cerambycid beetles.

61. **Myiarchus barbirostris** Swainson. TOM-FOOL.—Common at Lumsden and Jackson Town, and a few observed at Black River. During the latter part of July a pair had two young in a nest hole in a fencepost in Mr. McIntyre's dooryard in Claremont. Three stomachs contained 83 per cent of animal matter and 17 per cent of vegetable, the latter being entirely berries. The animal matter consisted entirely of beetles, among which weevils figured prominently.

62. **Myiarchus validus** Cabanis. BIG TOM FOOL.—Four were observed, and three collected, in a thickly wooded valley in the hills near

Lumsden in which Solitaires were particularly abundant. The birds were observed here on numerous occasions, but always singly except on one occasion (July 29) when an adult was observed accompanied by a young bird. The note was a vigorously uttered *pre-e-e*, similar to that of *M. barbirostris*, but much louder and harsher. The species is so similar to other Flycatchers of the genus *Myiarchus* in appearance, habits and notes that I can scarcely believe it to belong elsewhere than in this genus, though it has sometimes been placed in the genus *Hylonax* of the family Cotingidae. Three stomachs examined all contained entire land snails, forming 77 per cent of the total food. Two of the stomachs contained fragments of large beetles, which formed 23 per cent of the total food.

63. **Blacicus pallidus** Gosse. LITTLE TOM-FOOL.—Common at Lumsden, and observed at Jackson Town and Hope Gardens. They feed for the most part in low shrubs and herbaceous plants in clearings. Their note is a weak, rather short trilled *pree*. One stomach contained thirteen small weevils, two Buprestrid beetles, a small spider, and some unidentified insect fragments.

64. **Elaenia fallax** Sclater. JAMAICAN ELAENIA.—Observed only in wild brushy country at Lumsden, where it was far from common.

65. **Myiopagis cotta** Gosse. COTTA FLY-SNAPPER.—One observed at close range at Constant Spring on July 13.

66. **Progne dominicensis** Gmelin. CARIBBEAN MARTIN.—Observed at Kingston, Lumsden and Black River. At the latter place in August a flock used to fly at dusk west along the shore, evidently to a roost. In the morning it would return flying in the opposite direction.

67. **Petrochelidon fulva poeciloma** Gosse. JAMAICAN CLIFF SWALLOW. "CAVE SWALLOW."—Observed at practically all localities visited, but most commonly at Lumsden. There a colony of 20 pairs nested in erosion hollows in the cliffs which formed the roof and wall of a shallow cave. The nests contained young the last week in July.

68. **Corvus jamaicensis** Gmelin. JABBERING CROW.—A few observed on wild wooded hills near Lumsden.

69. **Mimus polyglottos orpheus** Linn. JAMAICAN MOCKINGBIRD.—Common at all points visited. A stomach contained only berries and seeds.

70. **Haplocichla aurantia** Gmelin. HOPPING DICK.—Common at Lumsden and Jackson Town, and seen at Moneague and Mandeville. The notes are a rather nasal complaining *kwak, kwak*. As they fly they utter a screeching *week, week, week*, resembling that of *Mimocichla ardosiacea*, a species of very similar habits and appearance. A stomach contained 11 Lepidopterous larvae, a large black ant, a Bombyliid fly, and 1 large seed.

71. **Turdus jamaicensis** Gmelin. GLASS-EYE.—Fairly common at Lumsden, but much more often heard than seen. The note is a higher pitched *cheep* than that of the Hopping Dick. A stomach contained exclusively large barley-shaped seeds.

72. **Myiadestes solitarius** Baird. JAMAICAN SOLITAIRE.—Common on the forested hills near Lumsden, where its flute-like trills were a characteristic sound. The song is so ventriloqual that the singer can be discovered only with difficulty, and I actually saw but five during two weeks spent where they were abundant. One was collected, and its stomach, which was quite muscular, was found to be full of some large hard berries.

73. **Vireosylva calidris calidris** Linn. JAMAICAN VIREO. "WHIP-TOM-KELLY."—Common. Young on the wing noted at Kingston July 9. Very few of these Vireos were heard singing after the 1st of August.

74. **Vireo modestus** Sclater. "SEWY SEWY."—The local name is a fairly good rendering of the most common song of this Vireo, but it also has a variety of other notes, one of the most frequently uttered being a buzzy squeak. Common at Lumsden, and observed at Jackson Town, Duncan's Bay, Mandeville and Black River. Two stomachs contained 72.5 per cent of insects (beetles and a walking stick), and 17.5 per cent of berry seeds.

75. **Coereba flaveola** Linn. JAMAICAN HONEY CREEPER. "CHECK CHECK" in Trelawney.—Common at all points visited. A stomach contained only finely macerated insects.

76. **Euneornis campestris** Linn. BLUE QUIT.—Observed in the vicinities of Kingston, Lumsden, Jackson Town and Mandeville. They were observed feeding on the fruit of an arum-like plant known locally as Rat-tail. The small black seeds contained in these fruits formed the entire stomach contents of one bird examined, while another contained exclusively insects. The common notes are a rapidly repeated series of harsh scolding sounds, and some high-pitched *screeps*. Some photographs were taken of an immature male, which was afterwards collected.

77. **Dendroica petechia petechia** Linn. JAMAICAN GOLDEN WARBLER.—Common near the sea, especially near mangroves. Several were collected in the vicinity of Black River. This part of the island is the type locality of Gosse's *D. eoa*, and a special search was made for this form. The nearest approach to it that could be found was a very brilliantly colored *D. petechia* with its crown of a deep reddish color. A stomach contained entirely small insects, largely Coleoptera.

78. **Dendroica pharetra** Gosse. ARROW-HEADED WARBLER.—Several observed in wooded valleys near Lumsden. A female and an immature bird were collected. On August 2 a family consisting of two adults and a number of young barely able to fly were observed. Whenever seen this species was feeding in the brush in typical Warbler style, never more than ten feet above the ground. It has a habit of continually flitting the tail. The note is a rather liquid *guit, guit.*

79. **Icterus leucopteryx** Wagler. JAMAICAN ORIOLE.—Quite generally distributed, but not seen very commonly anywhere. Noted at Kingston, Lumsden, Williamsfield, and Black River. Two were collected. The stomach contents of one was entirely small fruits and their seeds.

80. **Holoquiscalus jamaicensis jamaicensis** Daudin. JAMAICAN GRACKLE. TINKLING.—Locally distributed, and not uncommon in some places. One small flock at Hope Gardens constituted the only observation in the Kingston region. A large flock including adults feeding young frequented Lumsden. They would enter the house and take bread off the dining room table. If it was hard they would take it outside and dip it in water before swallowing it. In case no adult was nearby the young would pick up their own food; otherwise they would spread their wings and screech to be fed. A stomach contained 14 red berries (80 per cent), and a centipede (20 per cent).

81. **Spindalis nigricephala** Jameson. BANANA BIRD. "GOLDFINCH."—Common at Lumsden and Jackson Town. Also seen at Mandeville. They had a habit of perching high in the tree tops in the morning to sun themselves. Two stomachs contained seeds of fruits.

82. **Pyrrhuphonia jamaica** Linn. ORANGE QUIT.—A few seen in the vicinity of Kingston, and at Lumsden and Jackson Town. Their notes are harsh and chattery, suggesting some of the scold notes of the Tufted Titmouse.

83. **Pyrrhulagra violacea ruficollis** Gmelin. JAMAICAN GROSBEAK. BLACK SPARROW.—Common at Lumsden, Jackson Town and Mandeville, and a few observed in the mangroves at Black River. The song is a *wichi, wichi, wichi,* quite similar to one of the songs of *P. portoricensis,* but it also has a cicada-like buzz. In July and August it was feeding extensively on the seeds and fruit of a wild species of *Solanum.* This was determined by field observations, and confirmed by the examination of the contents of four stomachs.

84. **Loxipasser anoxanthus** Gosse. YELLOW-BACKED FINCH.—Observed frequently at Lumsden and Jackson Town, but not seen elsewhere. Two stomachs contained only small seeds. In the field they were observed to eat Guinea grass seeds. A female collected at Lumsden on July 28 contained an egg nearly ready to deposit. My field notes of the song are "a rather harsh and buzzy *scree, scree,* not very prolonged, but repeated several times in series."

85. **Sycalis flaveola** Linn. YELLOW FINCH. A pair observed at Constant Spring confirms the recent spread of this species to the eastern part of the island. Also seen at various places in the western part.

86. **Tiaris bicolor marchii** Baird. BLACK-FACED GRASSQUIT.—Common at all points visited, but less so than the orange-faced species. A stomach contained only seeds, mainly of *Solanum.*

87. **Tiaris olivacea olivacea** Linn. ORANGE-FACED GRASSQUIT.—Common at all points visited. A nest was kept under observation for some time at Lumsden. It was a typical nest for this species, domed, with the entrance at the side, and made of coarse grass, small sticks and a lot of green moss. When discovered it contained two white eggs spotted with reddish brown, which hatched on August 4. Two stomachs contained seeds, mainly of *Solanum.*

88. **Ammodramus savannarum savannarum** Gmelin. JAMAICAN GRASSHOPPER SPARROW.—Common near Kingston, at Jackson Town (where it was collected) and at Brown's Town.

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# SUGGESTIONS FOR A BIBLIOGRAPHY ON AVIAN LONGEVITY AND ON THE WEIGHT OF BIRDS.

BY PHOEBE KNAPPEN.

IN an article published in the July number of 'The Auk,' Mr. C. Emerson Brown writing on the longevity of birds in captivity [Vol. 45, 1928, pp. 345–348] though apprised of the valuable data to be gathered from the published reports on bird-banding does not refer to the rather voluminous literature already published on the subject of longevity. In illustration of the type and quantity of the recorded data a selected and annotated bibliography is given herewith. Only papers mentioning the ages of five or more species are included.

BOLAU, HEINRICH. Die Lebensdauer der Thiere in Zoologischen Garten zu Hamburg. Vögel. Zoologische Garten, 20, pp. 326–331, 362–367. 1879. [Ages of 290 species of birds.]

BONHOTE, J. L. Notes on the Age of Birds in Confinement. Avicultural Magazine, Ser. 3, 1 (9), pp. 259–267, July, 1910; 1 (10), pp. 299–310, August, 1910. [Records of many species of birds.]

BUTLER, A. G. Duration of Life in Captivity. Avicultural Magazine, Ser. 3, 1 (6), pp. 181–191, April, 1910; 2 (6), pp. 179–182, April, 1911; 4 (12), pp. 367–370, October, 1913; 1915, pp. 43; 1916, pp. 97; 1917, pp. 288; 1918, pp. 169. [The first three articles are of considerable value, giving lists of ages reached by many species and individuals in Dr. Butler's aviaries.]

DAUDIN. Traite Elementaire et Complet d'Ornithologie. [A compiled list in which 27 species are mentioned.]

FERGUSON, H. S. Report on the Trivandrum Museum and Public Gardens for 1900–1901, pp. 17–18. Trivandrum, Travancore, India, 1902. [Age of nine species of captive birds.]

FLOWER, S. S. Egypt, Public Works Dept., Zool. Gardens, Special Report No. 2, 1908. [Notes on age of some birds seen in European Zoological Gardens.]

FLOWER, S. S. Egypt, Public Works Dept., Zool. Gardens, Special Report 4, pp. 22–37, 1909.

FLOWER, S. S. Egypt, Public Works Dept., Zool. Gardens, Special Report No. 5, pp. 129–279, 1910. [List of the Birds in the Giza Gardens, giving the period in the gardens or age at death of 420 species of birds.]

FLOWER, S. S. Egypt, public Works Dept., Zoological Service Publ. 34, Cairo, 1921. Report on the Zoological Service for the Year 1920, p. 15. [Longevity of 12 species of birds.]

FLOWER, S. S. List of Birds of Prey, 1898–1923, with notes on their longevity. Egypt, Min. Publ. Works, Zoological Service, Publ. 37, 46 pp., Cairo, 1923.

FLOWER, S. C. Contribution to our Knowledge of the Duration of Life in Vertebrate Animals. IV. Birds. Proc. Zool. Soc. London, 1925. pp. 1365–1422. [Individuals of 909 species (77 families) having lived over six years are included.]

FOX, HERBERT. Disease in Captive Wild Mammals and Birds. Table 18, pp. 397–401. Philadelphia, 1923. [Ages of 61 individuals of 56 species of birds in the Philadelphia Zoological Gardens, at death.]

GILL, THEODORE. The Longevity of Birds and Other Vertebrates, Osprey, 3 (10), pp. 157–160, June 1899. [Discussion of J. H. Gurney's article and of other literature.]

GRABHAM, OXLEY. Owls and their Longevity. The Naturalist, p. 129, 1897. [Longevity of 5 species of Owls in captivity.]

GURNEY, J. H. On the Comparative Ages to which Birds Live. Ibis, Ser. 7, 5, pp. 19–42, January 1899. [Ages of 76 species (over 100 individuals), review of previous work.]

GURNEY, J. H. On the Comparative Ages to which Birds Live. Osprey 3 (10), pp. 145–155, June 1899. [Reprinting of the article in 'The Ibis' with slight revision.]

GUNTHER, A. C. L. G. Notes on Some Birds in Confinement especially with reference to their Age. Avicultural Magazine, Ser. 3, 2 (1), pp. 34–50, November 1910. [Age of a few species in his aviaries.]

LANKESTER, RAY C. Comparative Longevity in Man and the Lower Animals. [Considers 16 forms of animals, 11 being taken on the authority of Leopold Grindon.]

LILFORD, LORD. Raptorial Birds in the Lilford Aviaries. Norfolk and Norwich Naturalists' Society Trans., 4 (4), pp. 564–578, 1889; 5 (2), pp. 128–143, 1891. [Notes on longevity of many species.]

MITCHELL, P. C. On Longevity and Relative Viability in Mammals and Birds, with a Note on the Theory of Longevity. Proc. Zool. Soc. London, 1911, pp. 425–548. [Ages of 12,977 individuals of about 1600 species are recorded.]

NICHOLS, J. T. The Age of Banded Birds. Northeastern Bird-Banding Assoc., Bul. 3 (3), pp. 49–52, July 1927. [Tentative list of ages of 38 banded birds.]

OUSTALET, M. E. Notes sur la Longevite des Oiseaux. Ornis 10, pp. 65. 1899. [Ages attained by 6 species of birds in the Jardins des Plantes, Paris.]

OUSTALET, M. E. La longevite chez les animaux Vertebres. La Nature, 38 (1), pp. 378–379, 1900. [Discussion of some of the literature of longevity, noting well-known data on ages of birds, overlooked by J. H. Gurney, in 'The Ibis,' 1899.]

RIDLEY, H. N. The Menagerie at the Botanic Gardens. Singapore, Jour. Straits Branch Roy. Asiatic Soc., 46, pp. 169–183, December 1906. [Notes on age of about five species of birds.]

SANYAL, R. B. Handbook of the Management of Animals in Captivity in Lower Bengal. Bengal Secretarial Press, Calcutta, March 1892. [Ages attained by captive birds.]

SCHMIDT, MAX. Die Lebensdauer der Thiere in Gefangenschaft.—Vogel. Der Zoologische Garten, 19, pp. 41–49, 1878. [Ages attained by nearly 180 species of birds in the Frankfort-am-Main Zoological Garden.]

SCHMIDT, MAX. On the Duration of Life of the Animals in the Zoological Garden at Frankfort-on-the-Main. Proc. Zool. Soc. London, 1880, pp. 299–319. [784 individuals of 154 species of birds are listed with ages.]

THOMPSON, WILLIAM. Birds of Ireland. Natural History of Ireland, Volumes I–III, 1849–1851. [Many notes on longevity.]

The Ornithology of Francis Willughby. [Edited by John Ray.] Chapter IV. Of the Age of Birds. pp. 14–15, London, 1678. [Mentions age of about 7 species of birds.]

In the same issue of 'The Auk' Mr. Everett C. Meyers, writing on the body weights of birds [Vol. 45, July 1928 pp. 334–338], and reviewing previous references to the subject has overlooked a number of articles in which weights are given, which are here listed. Only those articles are included in which a number of records of weight of one species or one each of a number of species are recorded. The files of 'Forest and Stream' and the numerous books on game birds also contain many records.

FULLERTON, J. D. First Report of the Bird Construction Committee. Aeronautical Society, London, 61 pp., 1911. [Table 3—The Physical Characteristics of birds, giving weights of 459 birds.]

GLADSTONE, HUGH S. Record Bags and Shooting Records together with some Account of the Evolution of the Sporting-gun, Marksmanship and the Speed and Weight of Birds. H. F. & G. Witherby, London. Chapter 6, pp. 196–209, 1922. [Sums up the data on weights of about 50 species of birds.]

GRINNELL, JOSEPH. Notes on the Elegant Tern as a Bird of California. Condor 21, pp. 230–234, November 1919. [Weights of Elegant, Common and Royal Terns.]

GRINNELL, JOSEPH. The Californian Race of the Brewer Blackbird. Condor 22, pp. 152–153, July 1920. [Weights of 9 individuals.]

GRINNELL, JOSEPH. Concerning the status of the supposed two races of the Long-billed Curlew. Condor 23, pp. 21–27, January 1921. [Weights of 15 birds.]

GRINNELL, JOSEPH. Notes on Some Birds Observed in the Vicinity of Colusa, California. Condor 25, pp. 172–176, September 1923. [Extreme and average weights of 11 males and 8 females of *Pica p. nuttalli*, of 2 *Passerculus sandwichensis savanna*, 2 *Melospiza lincolni gracilis*, 1 *Telmatodytes palustris plesius*, 1 *Telmatodytes palustris paludicola*.]

GRINNELL, JOSEPH. Observations upon the Bird-Life of Death Valley. Calif. Acad. Sci. Proc. Ser. 4, 13 (5), pp. 43–109, 1 fig., November 1923. [Weights of many species and individuals.]

GRINNELL, JOSEPH. A New Race of the White-breasted Nuthatch from Lower California. Univ. Calif. Publ. Zool. 21 (15), pp. 405–410, 1 fig., 1926. [Average and extreme weights for *Sitta carolinensis aculeata* and the new subspecies *S. m. alexandrae.*]

GROSS, A. O. Progress Report of the New England Ruffed Grouse Investigation Committee. Brunswick, Maine. P. 4, June 25, 1926. [Weights and measurements, maxima, minima and average.]

GROSS, A. O. The Heath Hen. Mem. Bost. Soc. Nat. Hist. 6 (4), pp. 564-566, May 1928. [Weights of 7 males determined by Gross and observations of C. E. Hoyle on the average, maximum and minimum weights of male and female Heath Hen.]

The Grouse in Health and in Disease, being the Final Report of the Committee of Inquiry on Grouse Disease. Smith Elder and Co., London. Vol. I, Chap. VI. The Weight of Grouse. Vol. II, Appendices D and F. 1911.

HUNTINGTON, DWIGHT W. The Weight of Quail. The Game Breeder 29 (5), pp. 167. August 1926. [Quotes figures of J. Grinnell on weight of males and females of Mountain and Valley Quail.] Also quotes W. A. Bruette on average weights of northern and southern Quail.

LEFFINGWELL, DANA J. The Ringed-Neck Pheasant—Its History and Habits. Charles R. Connor Museum Occasional Papers, 1, p. 22. Pullman, Washington, April 1928. [Weights of Pheasants from 2 to 36 days old ranged from 18.2 to 27.8 grams, summer, 1925, Ithaca, N. Y.]

MAWSON, SIR DOUGLAS. Monthly Proceedings. (Antartic Birds). South Australian Ornithologist, 7 (1), p. 8. January 1, 1923. [The weights of 6 sea birds with reference to wing spread compared with 2 land birds.]

MORGAN, A. M. Weights of Hypoleucus varius hypoleucus. South Australian Ornithologist, 2 (7), p, 182, July 1916. [Weights of 2 males and 2 females of the Pied Cormorant.]

MORGAN, A. M. Weights of Hypoleucus varius hypoleucus and of Microcarbo melanoleucus. South Australian Ornithologist, 2 (3), pp. 76–77, July 1, 1917. [Weights of nine males and three females of the former and of 4 males and one female of the latter.]

MORGAN, A. M. The Weights of Some Australian Birds. South Australian Ornithologist, 4 (4), pp. 91–93, October 1919. [Weights of 38 species.]

MORGAN, A. M. Some Weights and Temperatures of Birds. South Australian Ornithologist, 5 (2), p. 48, April 1920. [Weights of 14 Australian species.]

MORGAN, A. M. Some Weights, Measurements and Temperatures of Birds. South Australian Ornithologist, 6 (8), pp. 174–175, October 1922. [Weights of 23 Australian species.]

PLUMB, CHARLES S. Increase in growth of young Robins. Science, 4 (82), p. 159, August 29, 1884. [13 weighings of 2 young Robins from July 28 to August 9, at Geneva, N. Y.]

THOMPSON, WILLIAM. Birds of Ireland. Natural History of Ireland. Volumes I–III, 1849–1851. [Notes on weights of many of the larger species treated.]

WHITTLE, C. L. Some Additional Bird Weights. Northeastern Bird-Banding Association, Bulletin 3 (3), pp. 70–71, July 1927. [Average weights of 16 species of North American Birds.]

WHITTLE, C. L. A Plea for more Bird Weighers. Northeastern Bird-Banding Association, Bulletin 3 (3), p. 75, July 1927. [Weights of Song Sparrows.]

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## GENERAL NOTES.

**Caspian Tern on Long Island, N. Y.**—Mr. Ludlow Griscom in his 'Birds of the New York City Region' (1923), gives the status of the Caspian Tern (*Sterna caspia*) on Long Island, N. Y., as "a rare or casual transient" and mentions the fact that but nine records of its occurrence had been published—only one of these being in spring (May 11, 1898). He cites three additional recent fall observations (September 8, 1914, September 28, 1916, and August 30, 1921).

It was, therefore, with great interest that I observed a bird of this species at Long Beach, Nassau County, L. I., on April 29, 1928. A close view, through 8x binoculars, was obtained, and the size, in comparison with Herring Gulls, the heavy red bill, the dark forehead and crown, the slate-gray undersides of the primaries and the rather short, forked tail were all carefully noted.

I have recently learned of four other observations of the Caspian Tern on Long Island, all by members of the Linnaean Society of New York. They are as follows:

1. One bird seen at Jones Beach, Nassau County, on May 30, 1925. (Messrs. Ludlow Griscom, Julius M. Johnson and Warren F. Eaton.)
2. Fourteen birds, also at Jones Beach, on August 15, 1926. (Mr. Ralph Friedman.)
3. One specimen seen at Long Beach, September 12, 1926. (Mr. Allan D. Cruickshank.)
4. Two at Oak Island Beach, Suffolk County, September 12, 1926. (Mr. Charles Johnston.)

My own observation, therefore, to the best of my knowledge, is the third of the occurrence of this species on Long Island in spring. It has, however, been recorded at two other localities in the New York City region at this season. Mr. J. L. Edwards saw two on Newark Bay, May 20, 1928, and Mr. John Kuerzi one at Todd's Neck, near Sound Beach, Connecticut, June 3, 1928. Messrs. C. A. Urner and T. Donald Carter also report one at the Manasquan Inlet, New Jersey, May 20, 1928.

Does the unusual "abundance" of the Caspian Tern on New York and New Jersey shores this past spring perhaps indicate a return to its former breeding grounds in Labrador and the Magdalen Islands?—E. R. P. Janvrin, M.D., *New York City.*

**Lesser Scaup Duck in Michigan in Summer.**—July 1, 1928, there were present on one of the small lakes of Newaygo County, a group of Lesser Scaups consisting of one male and three females. These birds showed a great deal of reluctance about taking flight and, when approached in a row-boat, sought escape by diving. Believing them to be crippled individuals in association, I pressed the pursuit. But they were well able to fly and took wing when I had come within ten or twelve yards of them.

There are few actual breeding records for this species so far south of its normal breeding range. It seems likely that many lists of wild fowl in which species are indicated as "probably breeding" are made without regard to the greater probability that the species so listed are not breeding individuals.—Edward R. Ford, *Grand Rapids, Mich.*

**Golden-eye Duck Nesting on the Ground.**—On the Grand Cascapedia River in eastern Quebec, we have a good many breeding Golden-eyes. In June of the present year I was informed by my companion, on a salmon fishing trip, that near to a favorite lunching place of mine, he had seen a duck fly from under a fallen tree top as if it had a nest there.

On June 19, I visited the spot and found the nest, which contained five rather large, buff-colored eggs, but saw no sign of the bird. I thought at first that they might be those of the American Merganser, as there were a number of them on the river, but on visiting the nest again a few days later I saw the duck leave the nest and it was unquestionably a Golden-eye. There were now seven eggs. She was setting when I last visited the nest on July 2, and I think there were one or two additional eggs at that time, although I could not count them accurately without disturbing the nest. It was placed under the trunk of a fallen tree top, on the ground, well protected from rain and well lined with down. All around the edge was enough down to cover the eggs.

I have never before seen or heard of Golden-eye's nest being anywhere but in a hollow tree.—W. B. Mershon, *Saginaw, Mich.*

**The Song of the Green Heron (Butoroides virescens virescens).**—The "pumping" of the Bittern and the "cooing" of the Least Bittern may be classed under the head of song, but for the Herons as a group there seems to be singularly little recorded in the way of a courtship song. The following quotation from Bent's 'Life History' of the Louisiana Heron, *Hydranassa tricolor ruficollis*, appears to be an exception. He quotes from the notes of Prof. Julian S. Huxley: "Another ceremony, which is much less commonly seen, appears to be performed by the male alone. In this the bird droops its wings, erects its neck vertically and its head almost so and gives vent to a groaning sound." In my account of the Green Heron, written for Mr. Bent's 'Life Histories,' I say: "Early one morning, when I was lying concealed in a grove of trees, a Green Heron alighted among them nearly over my head. Therupon it emitted a series of low double groans at irregular intervals. If I had not seen the bird, I should have been puzzled as to the source of the sounds."

Since this was written, I have had favorable opportunities both in the grove referred to above, and also in a swamp in the Ipswich dunes where I had established a blind for bird watching, to hear this song, for such I believe it is. A bird song is not necessarily musical or pleasing to human ears, but even such short notes delivered during the courtship season as the "sneeze" of the Alder Flycatcher, the "hiss" of the Sharp-tailed

Sparrow and the "shl-pp" of the Henslow's Sparrow are readily recognized as song. The attitude and excitement of the bird during their delivery makes this evident.

This is clearly shown in the case of the Green Heron who stands erect on a perch and at intervals raises his head and neck, opens wide his bill and emits his curious "song." The repetitions are irregular in time, sometimes only once, twice or three times a minute, sometimes eight or ten times and sometimes as often as ten times in a quarter of a minute. Once I saw the bird fly from one perch to another and emit the song while flying—a flight song.

The song is a very peculiar sound, slightly double, difficult to describe and a most un-birdlike one. It appears to come from the depths of the Heron's anatomy, like deep breathing or low groans. It may be written down *ow-er*, the *o* as in *cow* and the *er* much like the German *ch*. Hence it might be written *ow-ch*.—CHARLES W. TOWNSEND, *Ipswich, Mass.*

**Glossy Ibis (Plegadis falcinellus) in South Carolina.**—On May 1, 1928, the writer secured a specimen of the Glossy Ibis (*Plegadis falcinellus*) in an old rice field bordering the Cooper River. It was in fine plumage and proved to be a male upon dissection.

So far as I can ascertain, this is the first specimen actually taken in the state. Dr. Elliott Coues (in Proc. Bost. Soc. Nat. His., XII, 1868, 123), mentions this bird or the White-faced Glossy Ibis under the name *Ibis ordii* as a summer resident. Mr. Walter Hoxie (Ornithologist and Oölogist, X, 1885, 13) says that the "Glossy Ibis" is "rare or only occasional in young plumage; (June 30)." Neither writer records the taking of specimens.

The bird taken by me had the bare skin of the face marked by pure white lines, exactly as the one described by Mr. Oscar E. Baynard on page 46 of Bent's 'Life Histories of North American Marsh Birds.' A breeding bird collected by Mr. Baynard in Florida had the bare skin of the head "pure white where the feathers join the skin for the full length across the front of the head extending down to the upper corner of the eye" and "starting at the lower corner of the eye, the white streak extends down to the lower side of the lower mandible." The white streaks in my specimen's face entirely faded out in a few hours.

When first seen the bird was with another of the same species.—E. VON S. DINGLE, *Middleburg Plantation, Huger, S. C.*

**Geographic variation in Thinocorus orbignyanus Geoffroy and Lesson.**—D'Orbigny's Seed-snipe has heretofore been considered a geographically invariable species, ranging from Peru to Patagonia. Examination of material from various parts of its range, however, shows that it is divisible into two well-marked races. These are briefly characterized below.

**Thinocorus orbignyanus orbignyanus** Geoffroy & Lesson.

*Tinochorus Orbignyanus* Geoffroy & Lesson, Cent. Zool., 1830, pp. 137–139, pl. 48, 49. (Santiago, Chile.)

*Subspecific characters.*—Larger; the brown centers to the feathers of the back darker, the pale edgings usually narrower.

*Range.*—Highlands of Chile and Argentina.

*Remarks.*—Two birds collected by C. C. Sanborn at Chungará, Tacna, June 25, 1924, are not quite typical of *T. o. orbignyanus*, being somewhat smaller than most other Chilean and Argentine specimens. In coloration, however, they are practically identical with these skins, and on the whole agree better with *orbignyanus* than with the birds from more northern localities.

Birds from Argentina do not appreciably differ from typical Chilean skins.

**Thinocorus orbignyanus ingæ** Tschudi.

*Thinocorus Ingae* Tschudi, Arch. f. Nat., IX Jahrg., 1843, Bd. 1, p. 387. (Andes of Peru); ibid., Peru, Reisesk. 1838–42, II, 1846, p. 99 (Puna above Matucana[1]).

*Subspecific characters.*—Smaller; the brownish centers to the feathers of the back lighter, the pale edgings usually broader.

*Range.*—Highlands of Peru and Bolivia.

*Measurements.*—Based upon adult males.

| | | *Wing* | *Tail* | *Culmen, from base* | *Tarsus* |
|---|---|---|---|---|---|
| *T. o. orbignyanus* | 18 | 141.3–153.8 (147.0) | 65.5–72.8 (69.1) | 15.0–17.0 (15.9) | 21.5–25.0 (23.4) |
| *T. o. ingæ* | 6 | 134.5–141.0 (137.6) | 60.0–63.0 (61.4) | 13.8–15.3 (14.3) | 20.8–23.5 (22.2) |

*Specimens examined.*—*Thinocorus orbignyanus orbignyanus:* 27, from the following localities: Chile: Prov. Santiago (Las Condes, 5), Prov. Antofagasta (Rio Loa, 1; San Pedro, 2), Prov. Coquimbo (Baños del Toro, 3), Prov. Tacna (Chungará, 2), Cordillera of Chile, 1, Huachadera de Cordillera, 1. Argentina: Prov. Catamarca (Laguna Blanca, 3), Prov. Salta (Nevado del Cajón, 2), Terr. Rio Negro (Huanuluan, 5), Terr. Santa Cruz (Rio Chico, 1; Santa Cruz, 1).

*Thinocorus orbignyanus ingæ:* 9, from the following localities: Peru: Lake Titicaca, 4; Dept. Junín (Junín, 1). Bolivia: Dept. La Paz (Guaqui, 3; Tihuanaco, 1).

In conclusion I wish here to thank Mr. H. B. Conover and the authorities of Field Museum of Natural History, of the Museum of Comparative Zoology, and of the Princeton Museum of Zoology, from whom specimens were borrowed for comparison. I am especially indebted to Dr. C. E. Hellmayr for valuable suggestions and criticisms.—Pierce Brodkorb, *Evanston, Illinois.*

[1]This may be considered the type locality.

**The Dowitcher in Michigan.**—On May 31, 1928, while walking along the beach at Portage Lake, thirteen and a half miles northeast of Jackson, Mich., I flushed what I at first thought was a White-rumped Sandpiper. It was with a Ruddy Turnstone and three Least Sandpipers.

When they alighted I was surprised to see a decidedly cinnamon breast, a grayish neck, a light line over the eye brownish more or less speckled back and white bars on the rump, and I identified it as a Dowitcher. I was able to examine it at leisure with my binoculars at a distance of from fifteen to twenty-five feet and when I returned about an hour later it was still there. Two days later it had departed along with the other species with which it had associated. According to the late Dr. Barrows we have but few positive records for the species in Michigan.—Edith K. Frey, *Jackson, Mich.*

**Hudsonian Curlew and Greater Yellow-legs at Penco, Chile.**—In March, 1927, it was my good fortune to spend almost three weeks with a friend on the seacoast at Penco, Chile. Penco is a small port only a short distance from Concepcion. The day I arrived, March 1, Hudsonian Curlews were very abundant. It was easy to count a hundred or even more, sometimes twice that number in almost any direction on the grassy marshes. A few hunters were out almost daily but generally shot very few birds due to the difficulties in getting around on the marshes. I shot two specimens for my collection and rarely have I seen birds fatter than these. The whole body was covered with a layer of fat about half an inch thick. The birds were paring before starting on their journey northward. They were still there in abundance on the twelfth of the month when I went away for a week. When I returned on the twenty-first the only birds I could find were two that had apparently been injured by hunters. The others had all departed on their migration leaving behind only those physically unable to make the long journey.

The only other North American migrant I observed at this time was the Greater Yellow-legs. Several flocks of forty or fifty birds each were seen on different days. These birds seemed to be migrating and did not stay any length of time on the marshes.

These two species as well as the Lesser Yellow-legs are quite abundant in certain sections of Chile. They are very commonly shot as game birds. If some one could band a good number of these species it is very possible that some of the bands might be recovered in Chile. Should anyone in North America band any of these birds I would be glad to know of it so that an effort could be made to notify the hunters of this region and obtain any bands that may be found.—D. S. Bullock, *Angol, Chile.*

**Extension of the Breeding Range of the Turkey Vulture in Pennsylvania**—The Turkey Vulture (*Cathartes aura septentrionalis*) has for decades been known as a summer resident of the southern counties of Pennsylvania, where it frequently occurs also in winter. Warren's

statements indicate that in York, Montgomery, Lebanon, Lancaster, Lehigh, Delaware, Chester, Adams, Dauphin, Fayette and Somerset Counties, at least, it was regarded as a regular summer resident forty years ago (Birds of Pennsylvania, 1890, p. 116). Stone regarded it as common in Chester, Delaware, Lancaster and York Counties (Birds of Eastern Pennsylvania and New Jersey, 1894, p. 84). I found it breeding in Huntingdon County in the early spring of 1921 and 1923; and in Crawford County at Pymatuning Swamp local conditions are such that it probably has nested there for years (Birds of Pymatuning Swamp and Conneaut Lake, 'Annals Carnegie Museum' Vol. XVIII, 1928, 121). Since my residence in Harrisburg (November 1924—) I have noted the bird in the surrounding region at all times of the year. It is particularly abundant about the Gettysburg Battlefield.

During the past summer this species has extended its range northward noticeably in the central mountain district. Correspondence and conversation with members of the Field Force of the Game Commission have brought to light numerous records in sections where natives have never seen a Vulture before. In Clearfield, Elk, Cameron, Potter, and Clinton Counties particularly, the birds have been seen, and many nests have been found. In Clearfield County particularly, residents have inquired about the appearance of this new bird. Dr. Joseph S. Illick, State Forester of Pennsylvania, noted six Turkey Vultures at the large nurseries near Clearfield, Clearfield County, on July 22, 1928, where on his many previous visits to this region he had never seen one before.

Change of climate has probably had nothing to do with the extension of range in this species; the immediate cause is not difficult to trace. Deer have become so abundant in some sections of the Commonwealth that they have exhausted their food supply, and are dying by the score as the result of undernourishment, or of disease which accompanies overcrowding and lack of food. In Clearfield County hundreds of deer carcasses have been found along certain of the streams. In one spot near Clearfield I stood by the bank of a small stream and counted about me, within a radius of a few hundred yards, and all within sight at once, four dead deer. It is not surprising that the Vultures have taken advantage of this abundance of food. There is nothing unusual, of course, about a Vulture's travelling a great distance to secure food, so that at first thought we might suppose that the birds from southern counties were merely travelling northward on foraging expeditions. The presence of the birds throughout the summer, and the finding of several nests, however, indicate that the species has actually extended its range northward, chiefly as a result, it would seem, of the presence of a dependable food supply.

The Game Commission has announced a season on antlerless deer for the fall of 1928. This will probably mean the killing of many deer, so that the congestion which has had such disastrous effect in some sections will be relieved. Whether the consequent disappearance of a steady food

supply will cause the Vultures to withdraw remains to be seen. The fact that Turkey Vultures do not occur as permanent residents in the Pymatuning Swamp section suggests the probability that the birds which nest in the more northern counties of the Commonwealth spend the winter in the southern counties.—GEORGE MIKSCH SUTTON, *Board of Game Commissioners, Harrisburg, Pa.*

**Turkey Vulture in New Hampshire.**—A note appeared in a recent issue of the Keene, New Hampshire 'Sentinel' describing the shooting of a Turkey Vulture (*Cathartes aura septentrionalis*) on April 30, 1928, by William Royce, Jr., on the estate of Dr. William F. Wesselhoeft, at Jaffrey, N. H. The bird is stated to have weighed seven pounds and had a wing spread of six feet from tip to tip. The bird was mounted by George P. Wellington, a taxidermist and I examined it in his studio on May 31. It is a beautiful full plumaged specimen.—LEWIS O. SHELLY, *East Westmoreland, N. H.*

**Sparrow Hawk Killing young Chickens.**—Between June 27 and July 2, 1928, while traveling along the Redmon Road, in Edgar County, Illinois, I frequently saw, at the same spot in the road, a small chick in the talons of a Sparrow Hawk. The age of the chicks, which were Barred Rocks, was estimated by two chicken breeders at two weeks. The fact that this occurrence was seen always at the same point seems presumptive evidence that it was the same bird or one of the same pair (the sex was male in all cases where one could be certain of it). The fact that all chicks were Barred Rocks might lend some support to the same conclusion.

The diet of birds is known to vary within certain limits with the availability of certain food articles. However, when an insectivorous Hawk whose normal diet consists of only a small proportion of small birds turns "chicken hawk" with such earnestness and persistance, one is taken a little by surprise. In this case the factors causing the change are not far to seek.

For about two weeks preceding the period during which the observations were made there had been a record-breaking period of rainy, cool and cloudy weather. The insect population was considerably reduced by the weather. In fact, the hordes of insects that often detract materially from the pleasure of night driving at this period were conspicuously absent. It is not difficult to imagine, therefore, that the Sparrow Hawk was forced to turn to other sources of food.

Incidentally, peculiar conditions of the poultry and egg market have encouraged the raising of late chicks, which would account for the exposure of such young chicks at such a late date in the breeding season.—JOHN STEIDL, *Vanderbilt Hall, Harvard Medical School, Boston, Mass.*

**Flicker Trapped by Resin.**—On April 19, 1927, I saw a female Flicker (*Colaptes auratus luteus*) vainly attempting to fly along the lake shore at Evanston, Illinois. I was able to capture the bird without much trouble,

and upon examining it, found the tips of both wings, as well as the left half of the tail, thickly covered with the resin of a species of poplar, young shoots of which were growing abundantly in the vicinity. A considerable quantity of sand adhered to the resin.

It seems probable that the bird would not have been able to clean the substance from its feathers, as its most violent efforts did not serve to separate the quills.—PIERCE BRODKORB, *Evanston, Illinois.*

**The Type Locality for the Porto Rican Whippoorwill.**—In the original description of the Porto Rican Whippoorwill published in 1919.[1] I recorded the type locality as "Porto Rico" this being the only information other than the date on the label of the specimen, which is in the collections of the Field Museum. In recent conversation with Mr. Clark P. Streator who secured this bird I made inquiry regarding it to learn that it was secured near Bayamón, a small town across the bay from the city of San Juan. Mr. Streator has since kindly looked through his papers and writes me that he arrived in San Juan, Porto Rico, September 28, 1888, and that after some difficulty in obtaining collecting permits he established quarters in Bayamón about October 8, working there continuously until about November 20. His collections of about three hundred birds and a few bats were made entirely at this point The Whippoorwill, the only one seen, was secured there October 29.

On November 23, 1888, Mr. Streator took passage for Fajardo in a small sailing vessel but on arrival there fell ill with an attack of dysentery from which he recovered with difficulty and which terminated his field work in Porto Rico.—ALEXANDER WETMORE, *U. S. National Museum, Washington, D. C.*

**Habits of the Ruby-throated Hummingbird.**—At Berne, N. Y., on May 29, 1928, on a small branch of a horse-chestnut tree, nine feet and eight inches from the ground, and on a level with my dining room window, a female Hummingbird was building the foundation of a nest. The nest was plainly visible at all times from the window, and at intervals, standing on a step-ladder, I peered into it. There were no eggs in it on June 5 and on the morning of June 7 the mother bird was putting the finishing touches on the inside of the nest. I did not look into it on June 6 or 7 as she was not sitting. In the afternoon of June 8 the mother bird for the first time seemed to be sitting, and as soon as she left, I found two small elliptical shaped eggs in the nest. Authors vary as to the length of time it takes for the incubation of the eggs, some claiming a period of ten days, while one author has written, "It is about thirteen days between the full number of eggs and the appearance of the young." June 20 the eggs were not hatched. During the next three days the female bird was apparently not feeding the young but on June 24 she appeared to be doing so, and on examination I found that the nest then contained

[1] Proc. Biol. Soc. Washington, vol. 32, Dec. 31, 1919, pp. 235–238.

two tiny birds. I believe the young birds were hatched on June 24, thus taking about sixteen days for the incubation. July 9, I judged by its whitish throat that one of the young birds was a female, and by the darkish hue of the other's that it was a male. The female was then exercising her wings, and seemed stronger than the male. Authors differ as to the length of time the young birds remain in the nest. One author says, "In a single week the young are on the wing," and another, "but I have become convinced that they remain in the nest only ten days." July 12, at about eight o'clock in the morning, the young female left the nest. At 7 o'clock in the evening the young male was still there, but by seven o'clock the next morning he had departed. Thus the young had remained in the nest about twenty or twenty-one days.

Since Berne is in the Helderberg mountains, and we had the proverbial forty days of rain after Ascension day, conditions may have caused a variation in the length of time of the hatching and of the young remaining in the nest.

I noticed the female bird on the nest hundreds of times. She was the one that built the nest, hatched the eggs, and fed the young. I saw the male bird near the nest but twice, once on June 17, and again on June 24, when the female was on the nest.

From time to time I watched the latter. She did not constantly sit on the nest while hatching the eggs, but was off and on it during the day. On June 18 I counted her movements and within twenty minutes she had flown off and come back six different times.—D. A. Hinman, *Berne, N. Y.*

**On the Cooing of the Crow.**—In my 'Courtship Notes of the Crow' (Auk, XLIV, 1927, p. 551) I had supposed that I was the first to record "the pleasing sound which suggested the cooing of a Pigeon or the note of a cuckoo clock, but softer and more liquid." Since then I have discovered that two have preceeded me, and I am glad to record this here, not only to do them justice, but also to confirm an observation which seems almost unbelievable to those who have not made it.

Mr. C. J. Maynard in his 'Birds of Eastern North America,' ed. of 1896, p. 155, says: "I was once watching a pair of Crows that were building a nest in a small grove of white pines in Newtonville, Mass., and as I had succeeded in gaining a place of concealment not far from the birds, without attracting their attention, had a fine opportunity of observing their movements while they were entirely unconscious of my presence. The first thing that I noticed was a peculiar sound that resembled the cooing of a Dove, but it was far more musical. . . He would move sideways on his perch, bow his head, spread his tail, and droop his wings, at the same time uttering the cooing notes."

The second recorder is Mr. L. M. Terrill of St. Lambert, Quebec, who, in the 'Montreal Star' for April 17, 1926, writes: "A low-toned liquid 'coo-loo, coo-loo', rather musical than otherwise, immediately takes my attention. . .

I had also heard it on a few other occasions without tracing the source, and now at last I knew the author to be a Crow—one of the group on the tree top which attracted my casual attention when I first sat down."—CHARLES W. TOWNSEND, *Ipswich, Mass.*

**The Starling (Sturnus vulgaris) in western North Carolina.**—On August 16, 1928 at Boone, county seat of Watauga County, N. C., a flock of 55 Starlings was seen, and watched for some time, in a wide meadow, on the outskirts of the town. The birds were feeding upon grain, and were very shy, leaving sentinels on top of haystacks, while the rest of the flock was feeding below on the ground. By approaching behind other stacks, a close view was obtained of the birds, both with the unaided eye, and through 6 and 8x glasses. The elevation at this point is 3332 ft.

I was in company with Dr. J. J. Murray, of Lexington, Va., who is thoroughly familiar with the birds, seeing them daily about his home, and for some years, hundreds have roosted in the trees of his yard. We took no birds but our knowledge, was sufficient to identify the birds while at some distance and closer views were unmistakable. On August 17, Dr. Murray saw four Starlings in the town of Blowing Rock, Watauga County, ten miles from Boone, the elevation here being 4090 ft. We returned to Boone on the same afternnoon, and again saw the flock in the meadow in which they were first noted. So far as the writer is aware, the Starling has not been reported at this altitude, and locality in western North Carolina. ALEXANDER SPRUNT JR., *Charleston, S. C.*

**Are the Boat-tailed and Great-tailed Grackles Specifically Distinct?**—The two forms of the Boat-tailed Grackle occurring in the United States, *Megaquiscalus major major* and *Megaquiscalus major macrourus*, are universally regarded as only subspecifically distinct and slight color and dimensional differences are recorded for their separation.

A winter spent in Florida a few years ago gave me the opportunity to study the Boat-tailed Grackle in life and I was considerably surprised on meeting the Great-tailed form during the past winter to find what a very different bird it was.

Two equally striking distinctions are the color of the iris and the shape of the tail.

In *major* the former is always dark brown and the latter is an ordinary strongly graduated tail.

In *macrourus* the iris is pale straw color in both sexes and the much longer tail is strongly plicated or folded at all times in life as in Blackbirds of the genus *Quiscalus*, in fact the bird looks like an enormous Purple or Bronzed Grackle.

The outline of the ends of the tail feathers is very different when unworn examples of each are compared.

Also *macrourus* seems to me to be a much noisier and more vivacious bird than *major* with a far larger repertoire of notes and it may be found

in the heart of the towns exhibiting all the familiarity and assertiveness of a House Sparrow. *Major* seems to be of a more retiring disposition and in eastern Florida not so much in evidence in the vicinity of human habitations. However, I do not wish to emphasize these distinctions as they may be more apparent than real.

But the differences of the color of the iris and the shape of the tail are so outstanding that I should consider tham sufficient to entitle the birds to be regarded as full species.

Many other observers must have noticed these differences but I cannot find any published record of them. Ridgway in 'Bulletin 50' gives the iris as brown in *major* and records no difference in any of the four subspecies afterwards described. The tail he gives as plicate in form for the whole genus.

Mr. R. D. Camp tells me that where the ranges of the two birds overlap in the region of Aransas Pass they each retain their own characteristics.

Will someone, with a wider knowledge of both birds in life than I possess, come forward with further evidence on this interesting question?—ALLAN BROOKS, *Okanagan Landing, B. C.*

**Baltimore Oriole Feeding on Larvae of Needle Miner.**—On May 13, 1928, I found a pair of Baltimore Orioles (*Icterus galbula*) feeding on the larvae of a needle miner, probably *Paralechia pinifoliella*, in a pitch pine (*Pinus rigida*). The tree could be observed closely from my study window and the Orioles were seen feeding there each day until the twenty-second of the month. Both birds worked alike; resting on one foot, the bird would pull down a needle with the other foot, tuck it under the supporting foot with the bill, remove the larva and continue to feed in this manner until the five or six needles within reach were opened and held under the foot, then a new position would be taken. The larvae were to be found about half way down the needle, invisible from the outside. The operation of removing the larva from a needle was done with such skill that in no case did I find a needle broken or permanently bent. The female was silent, but the male kept up his characteristic whistling, mostly on one note. The tree was covered with brown tipped needles from the ravages of the miners the previous year. These needles the Orioles were not observed to touch.—GORDON BOIT WELLMAN, *Wellesley, Mass.*

**Dickcissel (Spiza americana) in Delaware Co., Pennsylvania.**—On May 26, 1928, Miss Mary Wood Daley, of Darling, Delaware Co., Pa., while on a bird walk was attracted by a strange loud note *dick–cis–cis* with strong accent on the first syllable and upon locating the singer found it to be a male Dickcissel in full breeding plumage. It was not at all shy and was very conspicuous. It did not stray far from a hedge by the roadside, flying from one side to the other and singing constantly, its favorite perches being a wild cherry bush and some dead brush nearby.

On June 9, she had the same experience but on neither day could any trace of a female or nest be found.

On June 18, Mr. Wharton Huber and I, following Miss Daley's directions drove to the locality and parking our car by the roadside found the bird singing from the wild cherry bush just in front of us. It flew across a field of clover and alfalfa once or twice and returned to the hedgerow. Presently we saw the female also, carrying food in her bill. For half an hour we searched the hedge row and the field but could find neither nest nor young, though doubtless the young birds were somewhere in the dense growth of underbrush. The old ones were not particularly disturbed by our presence and the male continued to sing at intervals.

On July 4, Miss Daley again visited the spot but no trace of the birds could be found.—WITMER STONE, *Academy of Natural Sciences, Philadelphia.*

**The Dickcissel in North Carolina.**—The first specimens of this species ever recorded from North Carolina were observed in a wheat field near Raleigh on May 19, 1928, by L. H. Snyder, C. S. Brimley and L. A. Whitford. A single pair only was observed and unfortunately neither was secured, but the birds were seen and heard at such short range as to leave no doubt as to the identification.—L. H. SNYDER AND C. S. BRIMLEY, *Raleigh, N. C.*

**The Dickcissel in Maryland.**—The disappearance of the Dickcissel (*Spiza americana*) east of the Alleghanies within the lifetime of ornithologists still living has been a matter of such speculation as to render the following observations on the occurrence of this species during the past summer near Dickerson, Maryland, of especial interest.

On July 15, 1928, in passing through this section by auto, our ears, trained to the song of the Dickcissel in field work in the Middle West, caught a familiar note, at first received incredulously, but a moment later most surprisingly verified by the steady repetition that characterizes the song of the male Dickcissel on his breeding grounds. At least six males were scattered through rank fields of timothy and red clover, grown heavily with daisies and other weeds, and we remained for an hour listening to their notes and watching them as they sang from weed top, hedge or telephone wire. One finely marked bird was under observation for some time within fifty yards. The group was patently on their breeding grounds, and a week later, on July 22, we returned to find three males still in full song. As we watched for them we observed a female fly into a growth of weeds with her bill filled with food, to be followed later by a male who perched above the point indicated. On going over, instead of finding the expected nest, we flushed a young bird, barely grown, that flew across into an adjacent field. This definitely established the breeding record, as the bird was only recently on the wing.

On July 29, our last record, three males were singing as vigorously as when the colony was first discovered.

It may be stated as certain that the Dickcissel did not nest at this point in 1926 or 1927, as we have had the area concerned under such observation that so conspicuous a species would have been certain of detection. After some discussion we did not collect specimens as they were not required for definite identification, and we did not care to disturb the possibility of establishment of a permanent colony of a highly interesting bird.

In the sixties of the previous century, Coues and Prentiss[1] wrote of the "Black-throated Bunting," as they termed the Dickcissel, "abundant, especially in the spring" in the District of Columbia. Within fifteen years the birds became rare, and finally disappeared. The latest records known to us for this vicinity are those of Kirkwood[2] who reports a specimen taken by Mr. Resler at Back River, Maryland, October 2, 1880; of H. W. Henshaw, who saw one near the Soldier's Home in Washington, May 31, 1887; of J. D. Figgins, who collected three, two of which are now in the National Museum, at Jefferson, Maryland, August 4 and 5, 1890; of C. W. Richmond, who recorded one near Brookland, a suburb of Washington, in May or June, 1894, and of Col. Wirt Robinson (then Lieut. Robinson), who recorded one near Fort Myer, Va., in June or July, 1894.—Alexander Wetmore and Frederick C. Lincoln, *Washington, D. C.*

**Dickcissel in New Jersey.**—On June 11, 1928, I received a letter from Mrs. Hermione Baker Warner of Sharptown, N. J., informing me that her husband, Leland I. Warner, had observed a Dickcissel apparently at home in his alfalfa field on June 10 and 11, 1928, and as I had stated that the species was now rare in southern New Jersey, she thought it worthy of record. This would appear to be another indication of a return of the Dickissel to its former habitat on the Atlantic coast during the past spring. —Witmer Stone, *Academy of Natural Sciences, Philadelphia.*

**Spizella taverneri on Migration in Montana.**—I spent the month of September, 1927 at the Montana Ranch Club near Cameron in Madison County, about seventy-five miles south of Bozeman. The ranch was situated on the upper benches of the Madison River valley about nine miles from the river and a half hour's ride below the nearest tongue of Canadian Zone forest at the base of the mountains. Just below the ranch house was a dried-up irrigation ditch which supported a dense growth of rose bushes and willows. On September 4, I flushed some small Sparrows from this place, which were obviously *Spizella*, but I was unable to identify the species positively even with protracted study through high-powered field glasses. They were not Clay-colored Sparrows, which occur only in eastern Montana, nor was I satisfied to call them Brewer's Sparrows, a species with which I was familiar in life, and which also was not supposed to occur in this section of Montana, above the sage-brush belt. In the meantime I was having great difficulties with the State Game Warden in securing

[1] Ann. Rep. Smiths. Inst. for 1861 (publ. 1862) p. 413.
[2] Trans. Maryland Acad. Sci., 1895, pp. 340–341.

a collecting permit, and prayed that it would arrive before the Sparrows had departed southward. They were studied almost daily, and while consorting with other species were noticeably wild and shy. The call note was a weak one for a Sparrow, and I should describe it as about halfway between that of the Savannah and Field Sparrows. My permit finally arrived on September 14, and I proceeded at once to the spot. Only four could be found, and after twenty minutes careful stalking I was finally able to collect an immature female in perfect condition. Two were left on the 15th, and these disappeared the next day. It was not until the specimen was compared at the American Museum of Natural History that it could be identified as *Spizella taverneri*, recently discovered by Swarth and Brooks in the mountains of Northern British Columbia. I do not recall having seen a published record as yet of this very close relative of Brewer's Sparrow away from its breeding grounds.—Ludlow Griscom, *Museum of Comparative Zoölogy.*

**Goldfinches Summering in Central South Carolina.**—On July 2, 1928, while sitting near a sunflower stalk, I was surprised to see a male American Goldfinch (*Astragalinus tristis tristis*) alight upon one of the flowers and begin his evening meal. The next day two males and a female came to the same flower and since then they have returned almost every day.

I attempted to find their nest and followed them for about a mile and a half to a swamp but without result.

Later, on a peach farm about six miles from Chesterfield I saw three Goldfinches and at McBride's Pond about seven miles in the other direction I saw another. All were in full summer plumage. My last record was on August 21, 1928.

As Mr. Arthur T. Wayne gives July 8, 1903, as the latest date for the bird in South Carolina and Mr. A. L. Pickens regards it as a winter visitor, my observations seem worthy of record.—H. B. Stevenson, *Chesterfield, S. C.*

**Lawrence's Warbler near Norristown, Pennsylvania.**—On May 7, 1928, I saw a Lawrence's Warbler near Norristown. The Warbler wave on that day was not unusual but during the afternoon I saw five Golden-wings which I consider noteworthy as I do not see them in this vicinity every year. In a small clump of oaks and beeches bordering a stream the Lawrence's appeared. It was in full sunlight and was an adult male in beautiful plumage. It did not bear any close resemblance to any other species that I could think of. It was feeding in the top of an oak and minutely examining the oak blossoms in that pretty fashion that Warblers have. Occasionally it would sing, much like the Golden-wing I thought. It remained in the same tree until I had completed a sketch of it and was tired of watching it. The black on the throat made a conspicuous triangle when seen from below.—Conrad Roland, *Norristown, Pa.*

(Mr. Roland's admirable color sketch of the bird was exhibited at a meeting of the Delaware Valley Ornithological Club.—Ed.)

**Brewster's Warbler in Ohio.**—On June 20, 1928, I had the good fortune to observe a very fine specimen of Brewster's Warbler (*Vermivora leucobronchialis*) at Auburn, Geauga County, Ohio. I was skirting the edge of an old field densely overgrown with hawthorns, aspens and shag-bark hickories, when a familiar song came to me from the middle of the field *swee-dzee-dzay-dzay*, with an upward inflection to the latter notes,—the song of the Golden-winged Warbler.

I found the singer perched on a thorn bush about twelve feet above the ground. His upper parts were uniform light gray; wings and tail gray, the former broadly barred with yellow; narrow black line extending through the eye, crown yellow but the forehead whitish; throat and under parts whitish with no suggestion of yellow on the throat. Except for the white forehead this description is typical of Brewster's Warbler in its lightest form (according to Chapman) I was able to observe the bird for about fifteen minutes in excellent light at all angles, through 6x glasses. As I approached nearer than about twenty feet he would fly on to the next thicket, but the constantly repeated song served as a means of relocating him each time. The bird seemed to be devoting his entire efforts to singing as he made no move toward feeding while I watched him.

The Blue-winged Warbler is a common summer resident in this region, breeding quite abundantly but the Golden-wing I have never seen in this particular locality although it is noted as a rare summer resident at Oberlin, 50 miles west, by Dr. Lynds Jones. I have covered the immediate vicinity about this field twice since June 20 but have not been able to find any trace of my bird.—William H. Watterson, *Cleveland, Ohio.*

**Mockingbird (Mimus polyglottos) nesting on Nantucket.**—On June 4, 1928, Miss Ethel A. Capen, and her brother Mr. Frederick M. Capen of New York City while out driving at the western part of the island of Nantucket, Mass., saw two Mockingbirds, that acted as if they had a nest in the vicinity. They rode out again on June 7 and got out of their car and waited. In a short time one of the birds, both of which had remained around, alighted, with a worm in her bill, on a large old brush heap, without any foliage of any kind, which stood about fifty yards or so from the farm house, and disappeared. The bird soon came out, and Miss Capen went at once and in a short time saw the nest, containing four fledglings. It was located about two feet from the ground, in the midst of this tangled mass of bare brush, and constitutes the first authentic record of the Mockingbird breeding on the Island. Miss Capen and her brother calling on me on June 16, 1928, told me of her find, and suggested that I go out and see the birds, and nest, that I might authenticate her identification. We went out the same afternoon, I saw both parent birds, which remained around in close proximity all the time we were there.

They called a solicitous note at intervals. The four nestlings filled the nest full; they appeared to be asleep, and were without movement of any kind. Their backs which were all I could see without disturbing them, had the scapulars showing a light yellowish brown, with some few pin feathers. Not wishing to disturb the birds any more than was necessary we left them.

On visiting the nest on June 17, we found it empty. The two parent birds were still in evidence but nothing was seen of the young. This breeding took place on the Walter Lupig farm towards the western part of the Island. It is my pleasure to see that Miss Capen gets the credit of this most interesting find.—GEORGE H. MACKAY, *Nantucket, Mass.*

**Thryomanes bewickii in New York City.**—On April 10, my brother observed a Wren in Central Park, New York City, which passed so quickly he was unable to determine the species. On the 13th of April, a Wren, probably the same individual, was seen by two other observers, but it was not until April 20 that the bird was positively identified as *Thryomanes bewickii*. This, according to all authorities, is the first record of Bewick's Wren in New York State. The little visitant from other parts seemed to like Central Park, for he stayed with us until May 15, favoring us daily with his sweet, Song Sparrow-like warble, always uttered *sotto voce*, as if a little awed by the noises of a great city; and he obligingly showed himself to the many bird lovers who came from all over the city to see him. We were sorry to have him leave us, and hope he will repeat his visit next year.—ETHEL A. CAPEN, *New York City, N. Y.*

**Black-capped Chickadee in Southwestern Illinois.**—Two examples of *Parus atricapillus atricapillus* have been taken by me in English Township, Jersey County, Illinois. The first, a male, was secured on November 28, 1925. The second, also a male, was shot on April 9, 1928. *P. carolinensis*, of course, is the breeding form.—PIERCE BRODKORB, *Evanston, Illinois.*

**Fuertes' Latest Work.**—In the July number of the Auk 1928, Mr. R. Heber Howe discusses the early work of Louis Agassiz Fuertes. We have in our possession two exquisite small paintings representative of the artist's latest work. More than any of Fuertes' paintings that we have seen, they combine the truly artistic as well as the scientific qualities. Special attention has been given to the details and the background.

One represents a Lake Erie scene showing seven Canvasbacks flying in the foreground, coming in to a rush-lined shore. White foamy crests of the wind-swept lake cover the lower half of the picture; the upper half a gray leaden sky revealing the on-coming gale. In the mists are dimly seen other flocks of Canvasbacks scurrying to safety. The artist called it "Storm on Lake Erie."

The second painting portrays a "Winter Scene on the Hudson River." Resting on the ice edging the river in the foreground is a wintering flock of

Old Squaws; others swim, dive, disport in the water, or fly above it. Every conceivable attitude is accurately depicted. Two pairs of Golden-Eyes can be distinguished to the left, one pair flying, the other swimming. In the background rise the snowclad hills, reflected in the water. Winter reigns supreme. But the large flock animates it all. One can almost hear the call notes.

These two small paintings are gems of Fuertes' artistry, faultlessly executed. They were painted in 1926 and sent to the writer upon completion, with a letter intimating that both were scenes that the artist had long wished to put on canvas. They clearly indicate how long and how accurately he could carry an impression of this kind, once made.—Aaron C. Bagg, 72 *Fairfield Ave., Holyoke, Mass.*

**Bird Weights.**—If the author of "Taking Body Weights of Birds" (Auk, July 1928, p. 334) will consult Bergtold's 'Incubation Period of Birds' he will find in it the weights of about 244 different species and subspecies of birds, given on the authority of about twenty-five different writers.

It may also interest him to learn that there is described in 'The Condor' of May 1922, p. 12, a set of scales which is portable and can be used in both field and study.—W. H. Bergtold, *Denver, Colorado.*

**Food of Bonasa umbellus.**—In the preceding issue of 'The Auk' [45 (3), pp. 330–333] Mr. R. A. Johnson states: "Comprehensive studies on the food habits of the Ruffed Grouse have apparently not been made." However, more work has been done along this line of study, than this statement would indicate. Consequently a list of some of the papers available for reference is presented below:

Forest and Stream. 9 (10), p. 185, October 11, 1877. [Examination of 3 stomachs taken in September, November and December.] 17 (7), p. 329, November 24, 1881. [Examination of a number of crops from Maine.] 23 (11), p. 207, October 9, 1884. [Examination of 2 crops from Canada.] 23 (12), p. 227, October 16, 1884. [Examination of several crops.]

Gross, Alfred O. Diseases of the Ruffed Grouse. Auk 45 (3), pp. 423–431, July 1925. [Crop contents of 5 individuals, 3 taken in November.]

Gross, Alfred O. Progress Report of the New England Ruffed Grouse Investigation Committee. Brunswick, Maine. pp. 2–3. June 25, 1926. [Summary of the results of examination of 64 stomachs by C. C. Sperry of the Biological Survey.]

Judd, Sylvester D. The Grouse and Wild Turkeys of the United States, and Their Economic Value. U. S. Dept. Agric. Biol. Sur. Bul. 24, pp. 25–38, 1 pl., 1905. [Examination of 208 stomachs and crops taken in every month of the year, New York furnishing the largest number.]

King, F. H. Geology of Wisconsin, Volume 1, p. 591, 1873–1879. [Food of 6 Ruffed Grouse.]

King, F. H. Trans. Wisc. State Agr. Soc. Vol. 24, pp. 472–473, 1886. [Same as the preceding item.]

Report of the Commission of Inland Fisheries and Game, Mass. 1900 (1901), p. 43; 1904 (1905), pp. 132–133; 1905 (1906), pp. 65–68; 1907 (1908), p. 70. [Feeding experiments for food preferences with young Ruffed Grouse in Captivity.]

Somers, J. On the Winter Food of the Partridge and on Partridge Poisoning. Proc. and Trans. Nova Scotian Inst. Nat. Sci. 6 (1), pp. 78–84, 1886. [Detailed summary of the food of the Grouse throughout the year based on crop examinations with the list of the contents of three crops.]

Terrill, L. G. McI. Note on Food of the Ruffed and Spruce Grouse. Canadian Field-Naturalist 38 (4), p. 77, April 1924. [Percentages based on crop contents of 16 birds taken from October 14 to November 10, 1922, 1923.]

Warren, B. H. Birds of Pennsylvania. Second Edition, p. 108, 1880. [Examination of 10 birds taken when the ground was covered with snow.]

Weber, J. A. Contents of the Crop and Gizzard of a Young Ruffed Grouse (*Bonasa umbellus*). The Auk 23 (4), pp. 459–460, October 1906.]

Weed, Clarence M. and Ned Dearborn. Birds in Their Relations to Man. pp. 224–226, 1924. [Quotes Dr. A. K. Fisher on contents of Grouse stomachs and results of authors examinations of 5 stomachs, 4 taken in September.]—PHOEBE KNAPPEN, *Washington, D. C.*

## RECENT LITERATURE.

**Holt on the Great White and Würdemann's Herons.** This paper,[1] which, by the way, won the Walker prize in Ornithology awarded by the Boston Society of Natural History, discusses at length the much debated problem of the Great White and Great Blue Herons of Florida. Mr. Holt, as a member of the Crile Florida Expedition of the Cleveland Museum of Natural History, had exceptional opportunities for the study of these birds on the Florida Keys in December 1923, and January 1924, which adds very materially to the value of his deductions from an examination of specimens and literature.

*Ardea wardi*, he, like other recent writers, regards as the Florida race of the Great Blue Heron, while *A. occidentalis* is considered to be a perfectly distinct species, and *A. würdemanni*, a hybrid between the two. He shows that the occipital plumes of *occidentalis* are either much reduced as compared with those of *A. h. wardi* or are absent entirely, and when present are of a different form. There are also other slight differences. He finds too that blue and white young of *würdemanni* in the same nest are the exception, and that such occurrences, as well as almost all the occurrences of *A. würdemanni*, are in the district where the ranges of *occidentalis* and *wardi* overlap.

He does not regard the blue and white phases of the Little Blue Heron as at all comparable to the Great White and Ward's Herons since the white phase of this species is almost certainly a condition of youth, and furthermore no blue young of the Little Blue has ever been found.

Some admirable photographs of the nests of the Great White Heron are reproduced as illustrations.

We heartily agree with Mr. Holt's conclusions and feel that very convincing and surprising evidence will be required to overthrow them.—W. S.

**Boyson's 'Falkland Islands.'**[2]—An important reference book which contains many valuable observations on birds but which has apparently not been reviewed either in 'The Auk' or 'The Ibis,' is a volume on the Falkland Islands which appeared in 1924. This well illustrated hand book is divided into four parts: Pt. I, History, pp. 13-191; Pt. II, Industries, pp. 193–243; Pt. III, Geographical Notes, pp. 245–279; Pt. IV, Zoology, pp. 281–382, followed by an appendix containing Statistics, pp. 383–398, and an Index.

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[1] The Status of the Great White Heron (*Ardea occidentalis* Audubon) and Würdemann's Heron (*Ardea würdemanni* Baird). By Ernest G. Holt. Sci. Publ. Cleveland Museum of Natural History. Vol. I, No. 1, pp. 1–35, pls. I–VI. July 28, 1928.

[2] The | Falkland | Islands | by V. F. Boyson | with Notes on the Natural History | by Rupert Vallentin | Oxford | at the Clarendon Press | 1924. 8vo., pp. i–xii, 2 leaves, [13]–414, 34 plates and map.

The section of most interest in this connection is that relating to birds on pp. 285 to 335, based on the field observations of Rupert Vallentin who made three visits to the islands remaining five months in 1897–98, the season of 1901–02 and two years beginning in 1909—much of the time during the last trip an West Falkland. The list of birds includes 35 species of which only 8 are land birds. One of the latter, the Turkey Buzzard (*Cathartes falklandica*) is unfortunately becoming rapidly extinct owing to the constant warfare waged upon it. Many interesting notes are given on the three species of Penguins, the King (*Aptenodytes patagonica*), the Gentoo (*Pygoscelis taeniata*), and the Rockhopper (*Catarrhactes chrysocome*).

The principal industry of the islands is sheep raising which has caused a marked change in the vegetation and great diminution in some of the birds. It is said that in 1903 there was considerable agitation for the destruction each year of 150,000 Upland Geese (*Chloephaga magellanica*), which were estimated to consume grass enough for 20,000 sheep. As a result of this demand "An Ordinance for the Destruction of Geese was passed, the number of beaks to be purchased during the first year being for the East Falklands 50,000, for the West Falklands 37,500 (p. 210). Although most of the other birds are protected by law Upland Geese apparently are not as yet protected even during the breeding season.

Readers who are interested in the resources and natural history of this remote southern colony will be well repaid by a perusal of this volume. —T. S. P.

**Thompson's 'Aunt Chloe and Her Birds.'**[1]—There is something about the negro dialect that fascinates children and the Uncle Remus stories have held the attention of several generations, nor do the children tire of them after they have ceased to be children.

Mr. Thompson has taken this method of presenting his bird stories and has done so most successfully. He has evidently studied the dialect carefully and has reproduced it with great accuracy. Aunt Chloe, well versed in the habits of wild creatures, entertains a group of girls from the city with the life histories of the Baltimore Oriole, the Catbird, the Cardinal, the Crane, the Blue Jay—"dat bird o' satan,"—Cowbird and Cuckoos, English Sparrow, Turtle Dove and Crow, while there are also chapters on the song bird strike and a bird convention.

Mr. Thompson cleverly endows Aunt Chloe with knowledge of the latest reports of the Biological Survey and the Audubon Societies so that much valuable information is instilled into the minds of the young readers which through a more direct medium would be dry and uninteresting.

The most attractive sketches however are those which include some of the traditions and folk lore of the negroes. The old Crane [Heron],

[1] Aunt Chloe and Her Birds. By William Edgar Thompson. Second edition revised and enlarged, with eight full pages in color and many pen and ink sketches. Price $2.00. William Edgar Thompson, Bedford, Virginia. 1928. pp. 1–208.

for instance, is described as "just like a dahky. He aint got he min' on livin' atall. He all de time studyin' bout dyin' * * * let a huhse go by an a dahky'll lean on de hoe an' watch it as fuh as he kin see it, axin' 'Who dat daid?' Dat 's de way 'tis wid dat crane, but he not only fin' out who's daid, but he know who's gwine die, an' if he fly ovah de roof of yuh house, sayin, 'Cawpse, cawpse-cawpse' he done prophesy."

Some of the best of the Audubon Society's colored bird pictures are used in illustration and there are some black and white drawings depicting negro scenes, in the main, but most unfortunate where the artist attempts to sketch birds, especially where the Pheasant (Ruffed Grouse) "thumpin' a log wid he wings" is depicted as the long tailed English Pheasant!

Mr. Thompson's excellent book should have a wide sale. It is not only interesting reading but educational as well and should do much good in spreading an interest in birds and their protection.—W. S.

**Loveridge on Vertebrates of the Smithsonian-Chrysler African Expedition.**—Mr. Arthur Loveridge, a member of the recent Smithsonian-Chrysler expedition to East Africa, under the leadership of Dr. W. M. Mann, director of the National Zoological Park, presents in this paper[1] his notes on the vertebrates obtained or observed.

The expedition, whose object was primarily the acquisition of live animals, landed at Dar es Salaam, in Tanganyika Territory, on May 6, 1926, and left for home on September 9, making its headquarters at Dodoma, midway between the coast and Lake Tanganyika.

Mr. Loveridge has had previous experience in Tanganyika which renders his observations of the fauna all the more valuable. He presents an itinerery of the expedition with some account of the several native tribes with which the party came in contact and likewise a discussion of their influence on the decrease of the game animals. They are, he tells us, more of poachers than hunters, and catch their game with deadfalls and snares. They also catch the recently born young of many of the smaller antelopes. While there is no justification in their killing of wild game since they have plenty of available meat in their own herds, the same argument applies equally to the European sportsman.

The main text of Mr. Loveridge's paper is devoted to accounts of the captive individuals of the various species which the expedition secured and their habits and character in confinement as well as the methods of feeding them and the most desirable food.

The report will prove of the utmost value to the keepers of animals in zoological gardens showing as it does which species are most satisfactory for captivity and what food proves most acceptable, but it has also great value as a contribution to the life histories of East African animals.

The bird portion contains notes of eighty-six species. Emin Pasha's

[1] Field Notes on Vertebrates Collected by the Smithsonian-Chrysler East African Expedition of 1926. By Arthur Loveridge. Proc. U. S. Nat. Museum, Vol. 73, Art. 17, pp. 1–69, pls. 1–4. 1928.

Barbet we are told nests in burrows with a vertical shaft and the natives secure them by pouring water in the holes and drowning them out. Speaking of the birds of the vicinity of Bahi in May, Mr. Loveridge says: "familiar as I have been with large numbers of water fowl on East African lakes I have never seen anything quite so staggering as the flocks which were encountered here. I approached within a hundred yards of a flock of Pelican numbering between two and three thousand. Palm trees in the distance were white with wood Ibis and smaller flocks of sacred and glossy Ibis, open-bill and Spoon-bill were put up." No nests were to be found in the immediate neighborhood as the provincial commissioner was reported to have ordered all nests destroyed as the presence of the birds interfered with the local industry in dried catfish. So even in such remote localities does wild life have to give way before the commercial pursuits of man!

A number of interesting photographs taken on the expedition are presented as illustrations.—W. S.

**Bergtold's 'Guide to Colorado Birds.'**[1]—The stated object of this little book is to answer questions regarding Colorado birds and to "help beginners and the uninitiated to make a good start in Colorado Ornithology."

The method employed is to present a systematic list of the birds of the state with brief descriptions and measurements of all but those of unusual occurrence, while numerous keys of purely artificial arrangement and based upon obvious color or structural characters are presented to aid the student to trace out the name of any bird that he may come across. Special attention is given to the Ducks and tables of characters are drawn up to further facilitate their identification, so also in the case of the Hawks, Sparrows, and other groups, additional groupings of the species emphasize other striking characters which may aid in naming them.

A table of spring migration dates for Fort Lyons, Denver, Loveland, Idaho Springs and Fruita is presented, those from the second locality from the author's records the others from other sources, while there is a bibliography of articles and books relating to Colorado birds, published since 1909.

Dr. Bergtold has certainly presented a vast amount of information which cannot help but be of assistance to the beginner in Colorado ornithology while those desiring the detailed records of rarities etc., will naturally turn to the works of Cooke and Sclater, as it is useless to complicate an elementary work with republication of such data.

It is difficult to judge of the merits of artificial keys as their utility can only be determined by usage. Personally we feel that the divisions of a key should be exclusive, that is to say, there should be only two alterna-

[1] A Guide to Colorado Birds. By William Harry Bergtold. Fellow of the American Ornithologists' Union. [No place, no date = Smith-Brooks, P. O. Box 540, Denver, Colo. August 10, 1928], pp. 1–207. Price $2.25.

tives in every choice of characters. This is not the plan followed in the present work and we find birds grouped under such primary headings as "slate or gray"; "head blackish or dark gray"; "wing spots or bars"; "rump white"; and "legs long." It is obvious that some species will fit under four or five of such classes and it takes some time to run them down in each until you find which one is the right one. Of course such species are usually repeated in each class so that this trouble is often avoided but not always.

The most serious criticism that can be brought against Dr. Bergtold's book is the carelessness in the use of common names in the keys and the unfamiliarity of the proof reader with ornithological names. In a hurried perusal of the text and index we note upwards of sixty misspelled names while such a well known name as Bonaparte is consistently spelled "Bonepart" while Wheatear everywhere appears as "Wheateater" etc.

In the keys there is no consistency as to the possessive, the apostrophe being retained or omitted on succeeding lines, while many names such as Butcherbird, "Orange-shafter [sic] Flicker," etc. are used in the key but are not to be found in either the text or the index, which must be a serious hindrance to the beginner. We earnestly hope that Dr. Bergtold, when another edition is to be printed, will see that the printer secures a competent proof reader which will vastly enhance the practical value of his little book.—W. S.

**Holt on the Birds of Itatiaya Mountain, Brazil.**[1]—From December 12, 1921, to April 30, 1922, Mr. Holt was engaged on an ornithological survey of the Serra do Itatiaya for the American Museum of Natural History, and in the paper before us he presents the results of his work, including an annotated list of the 559 specimens secured.

The peak towers 7800 feet above the plains and is in reality a volcanic eruption superimposed on the more ancient Serra da Mantiqueira range. Geographically it is located near to the juncture of the three states of Rio de Janeiro, Sao Paulo, and Minas Geraes, although practically all of Mr. Holt's work, as well as that of previous ornithologists, has been in the first.

He finds three life zones represented on the mountain: the Tropical, Subtropical and Temperate, practically coextensive with the plant zones delimited by the botanists. While Dr. F. M. Chapman in his studies of Andean bird life, has expressed the opinion that the Subtropical Zone never reaches sea level Mr. Holt thinks that this probably does not hold good for Brazil and that a study of conditions on the coast between the southern border of Sao Paulo and the southern end of the Serra do Mar, would show this zone meeting the sea.

Tabulating the 187 species of birds found on the mountain, the author

[1] An Ornithological Survey of the Serra Do Itatiaya, Brazil. By Ernest G. Holt. Bull. Amer. Museum Nat. Hist., Vol. LVII, Art. V., pp. 251–326, June 7, 1928.

finds 71 characteristic of the Tropical, 62 of the Subtropical, 12 of the Temperate and 42 of general distribution, while an additional table gives the altitudinal range of each.

His several collecting stations are described in detail with the characteristic species of each, and then follows the well annotated list.

As Mr. Holt says "with a few notable exceptions local lists of birds are practically non-existant for Brazilian localities and those that do exist contain no data on altitudinal distribution." It will therefore be at once evident that he has made a contribution of no mean importance to zoogeography.

As the Serra do Itatiaya is—with one exception, Pico da Bandei ra—the highest mountain in Brazil, and is separated by some 1200 miles from the nearest outlying spur of the Andes, it would be extremely interesting to have some comparison of the avifauna of the two ranges. We trust that Mr. Holt's valuable survey will place Dr. Chapman in a position to make such a comparison, and to trace the origin of the fauna of these coastal mountains as he has already done for the Andean system.—W. S.

**Kendeigh and Baldwin on Temperature Control in House Wrens.**—The investigations described in this paper[1] were carried on at the Baldwin Bird Research Laboratory, with the use of specially constructed mercury thermometers and thermocouples, the latter proving more reliable and satisfactory.

There is much detailed description of the methods employed and the data obtained. The object in view was the determination of the amount of variation in temperature exhibited by nestling House Wrens of various ages. The data show that, under natural nest conditions, the body temperature varies several degrees during the first few days out of the shell, but by the time the young are ready to leave the nest, the temperature is higher but distinctly less variable, so that the young nestlings are more like "cold-blooded" animals than like warm-blooded ones, so far as their temperature variation is concerned.

Other investigations show that there is a definite development of a resistance against cold which follows the sigmoid growth curve but there is no efficient resistance against extreme heat, though rapid respiration and the development of air sacs probably serve to this end.

This paper is a good illustration of the excellent work, in what might be termed "experimental ornithology," that is being carried on in Mr. Baldwin's Research Laboratory, and we look forward to many other important investigations under his efficient direction.—W. S.

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[1] Development of Temperature Control in Nestling House Wrens. By S. Charles Kendeigh and S. Prentiss Baldwin. American Naturalist, LXII, May-June, 1928, pp. 249–278.

**Phillips on Birds Introduced in North America.**[1]—Dr. Phillips has been at much pains to compile a well annotated list of all wild birds introduced or transplanted in North America. The dates of the attempts to establish foreign species and the success or failure of the enterprise are given as well as comments upon the desirability and habits of the species, and lists of references to published articles and to records, letters etc. of the U. S. Department of Agriculture.

As might be supposed, the game birds occupy the bulk of the report and in the case of the Bobwhite its introduction into the various western states is discussed at length. The introduction of southern stock, moreover, into New England, Ontario, etc. has affected the climatic resistance of the species in the northern part of its range and it will not persist as far north as it did twenty-five or fifty years ago.

The attempted introduction of the Bobwhite in England, France, China, and New Zealand furnishes interesting reading, as well as the remarkably successful introduction of the California Quail in New Zealand and Chile.

There are mentioned in the text about one hundred species which have been liberated in North America but only a very few have become permanently established, notably, of course, the Starling and the English Sparrow. Curiously enough the Hungarian Partridge has thrived in western Canada and some of the Rocky Mountain states, but attempts to introduce it in the east have almost always failed.

Those who have had no acquaintance with the subject of importation of foreign species of birds will be surprised to know that as many as 13,000 Australian Shell Parrakeets were brought into the country in one year; and when we consider the large number of other species imported it is surprising that more have not become established through accidental escape.

Dr. Phillips has performed a very important service in collecting the data that he has published, before it is too late, and his report becomes at once our leading work of reference on the subject.—W. S.

**Swarth on Some Asiatic Birds in Alaska.**[2]—During the summer of 1927, Mr. C. G. Harrold spent several months on Nunuvak Island, Alaska collecting birds for the California Academy of Sciences, and in the paper before us Mr. H. S. Swarth lists the Asiatic species that he obtained there with notes on their identification.

These are *Charadrius mongolus mongolus*, *Pyrrhula pyrrhula cassini*, *Anthus spinoletta japonicus*, *Locustella ochotensis* and *Prunella montanella*. The last three are additions to the A. O. U. 'Check-List.' It is true that

[1] Wild Birds Introduced or Transplanted in North America. By John C. Phillips, Coöperating with the Bureau of Biological Survey. U. S. Dept. Agriculture Technical Bulletin No. 61. April 1928, pp. 1–63. Price 10 cents (address Supt. of Documents, Gov't. Printing Office.)

[2] Occurrence of Some Asiatic Birds in Alaska. By Harry S. Swarth. Proc. Calif. Academy of Sciences, Vol. XVII, No. 8, pp. 247–251, July 10, 1928.

there is a previous record of *A. s. japonicus* from Alaska, but a reëxamination of the specimen shows that it is really an example of *A. s. rubescens*.

With regard to the *Pyrrhula*, Mr. Swarth shows conclusively that the original specimen of *P. cassini* is the female of a form of *P. pyrrhula* and not a straggler of the central Siberian species, *P. cineracea*, as has generally been considered.

These Asiatic stragglers to Alaska have caused considerable trouble as to fixing their correct identity and Mr. Swarth has done a good service in so carefully studying his material before publishing his records.—W. S.

**Recent Papers by Friedmann.**—Dr. Friedmann has recently described[1] two additional birds from Tanganyika Territory collected for the Museum of Comparative Zoology by Mr. Arthur Loveridge. These he names *Apalis chapini* (p. 47) and *Turdinus rufipennis distans* (p. 48).

In another paper[2] he describes *Parisoma böhmi somalicum* (p. 51) from British Somaliland. He has also discussed[3] the treatment of the African Hawks of the genus *Melierax* and proposes a new race *M. metabates ignoscens* (p. 94)—W. S.

**Murphy on Birds Collected During the Whitney South Sea Expedition. IV.**—In this brief paper[4] Dr. Murphy discusses Petrels of the genera *Pterodroma*, *Puffinus* and *Fregetta*. *Pterodroma becki* (p. 2) from the Solomon Group and *Fregetta grallaria titan* (p. 4) from Rapa Island, Austral Group, are described as new.—W. S.

**Sinclair on Omorhamphus a New Fossil Flightless Bird.**[5]—Dr. W. J. Sinclair has recently described the remains of a remarkable fossil bird, possibly related to *Diatryma*, which was found in the Lower Eocene of Wyoming by Mr. T. C. von Storch, a member of the Princeton 1927 Expedition, and which he names *Omorhamphus storchii* (pp. 51–52).

The material consists of the tip of the beak, the left leg complete, except for a few phalanges, a number of broken vertebrae and other pieces. The bird is placed provisionally in the family Diatrymidae.

While there can hardly be any ambiguity regarding Mr. Sinclair's names since there is obviously only one species involved, he, nevertheless, has failed to follow the recommendation of the International Commission

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[1] Two New Birds from Tanganyika Territory. By Herbert Friedmann. Proc. New England Zool. Club, X, pp. 47–50. April 14, 1928.

[2] Notes on Parisoma böhmi with a Description of a New Race. By Herbert Friedmann. ibid., pp. 51–53. June 8, 1928.

[3] Notes on Melierax with Description of a New Form. By Herbert Friedmann. Proc. Biol. Soc. Washington, Vol. 41, pp. 93–96. June 29, 1928.

[4] Birds Collected During the Whitney South Sea Expedition. IV. By Robert Cushman Murphy. American Novitates Museum, No. 322, pp. 1–5. July 14, 1928.

[5] Omorhamphus, a New Flightless Bird from the Lower Eocene of Wyoming. By William J. Sinclair. Proc. Amer. Philosophical Society, Vol. LXVII, No. 1, 1928, pp. 51–65.

on Zoological Nomenclature in definitely naming a type species for his genus.—W. S.

**Wetmore on Cyphornis magnus.**—Dr. Wetmore has recently[1] made a careful examination of the type specimen of the fossil bird described by Cope as *Cyphornis magnus* from the tertiary of Vancouver island, and now in the collection of the National Museum of Canada. It is the proximal portion of a left metatarsus, representing probably less than one-fourth of the entire bone.

Cope's idea that *Cyphornis* is most closely related to the Pelicans is upheld but from the fact that it also shows affinities to the Sulidae, and more distantly to the Phalacrocoracidae and Anhingidae, Dr. Wetmore proposes to erect a new family Cyphornithidae for it, and in the same family would include *Palaeochenoides* Shufeldt, which he has already shown belongs to the Pelecaniformes and has nothing to do with the Geese. Dr. Wetmore's paper is rendered more valuable by an excellent figure of Cope's type.—W. S.

**Bowen on the Classification of the Pteroclididae.**—In this study Mr. Bowen comes to the conclusion that neither the elongation of the central pair of rectrices nor the number of rectrices is of sufficient importance for use in generic separation in the Sand Grouse, and therefore he declines to recognize the genus *Eremialector*, based chiefly on the former character, and relegates it to the synonymy of *Pterocles*.

He does however divide *Pterocles* into two genera upon other characters, proposing *Dilophus* (p. 11) for *P. lichtensteinii* and its allies. In a footnote however he cancels this genus in favor of *Nyctiperdix* Roberts, 1922, which has priority. Inasmuch as one species in each genus fails to agree with the others in several characters it would seem that the proposed groups might better be regarded as subgenera.

Mr. Bowen at all events has brought together a valuable mass of information regarding the structural characters and habits of the Sand Grouse, which will prove of much value to all who have occasion to study them.—W. S.

**Stone on a Collection of Birds from Para, Brazil.**[3]—Between Feb. 23 and May 26, 1926, Messrs. Rodolphe M. de Schauensee and James Bond of Philadelphia collected birds and mammals in the lower Amazon region, Brazil, near Pará, and along several rivers in the vicinity. A

[1] The Systematic Position of the Fossil Bird Cyphornis magnus. By Alexander Wetmore. Bulletin 49, Geological Survey, Canada Department of Mines, March 15, 1928, pp. 1–4.

[2] Remarks on the Classification of the Pteroclididae. By W. Wedgwood Bowen. American Museum Novitates, No. 273. September 6, 1927, pp. 1–12.

[3] On a Collection of Birds from the Pará Region, Eastern Brazil. By Witmer Stone (with Field Notes by James Bond and Rodolphe M. de Schauensee.) Proc. Acad. Nat. Sci. Philadelphia, LXXX, 1928, pp. 149–176.

series of 509 birds, representing 243 species, and a small collection of mammals were obtained for the Academy of Natural Sciences, Philadelphia. This collection of birds has been identified by Dr. Stone whose report constitutes a valuable addition to the list of faunal papers of Eastern Brazil. It is interesting to note that 22 species of birds obtained by this expedition are not included in the list of birds of the Pará district published by Dr. Hellmayr's in 1912.

Bird life was abundant, and although a number of nests were found, relatively few birds were breeding at this season. Among North American species a Semipalmated Plover (*Charadrius semipalmatus*) was secured as late as April 24, a Solitary Sandpiper (*Tringa solitaria*) as late as April 20, and a Greater Yellow-legs (*Totanus melanoleucus*) Oct. 30. Only seven species of Parrots are mentioned but twice as many kinds of Humming birds. The collection contains two examples of the rare *Antiurus maculicaudus* of which, according to Hellmayr, there are only ten other specimens in collections and these two are the first obtained at Pará since the type was collected many years ago. It is to be regretted that the collectors' field notes which add so much to the value of a paper of this kind are not more voluminous and are entirely lacking for more than one third of the species.—T. S. P.

**Revoil on the Passenger Pigeon.**[1]—In a work by the French traveler and naturalist, Benedict Henry Revoil, entitled 'Chasses dans l'Amerique du Nord' is a chapter, "Les Pigeons," in which he describes a flight of Passenger Pigeons observed by him in the autumn of 1847, near Hartford, Kentucky, with some observations on other flights and the tremendous destruction of the birds. His account published in 1869 is graphic and gives one an excellent picture of the multitude of birds which composed these wonderful flocks.

We are indebted to Mr. William Benignus of New York City for translating the account at the instance of Col. Henry W. Shoemaker, and it has been published as 'Wild Life Bulletin No. VIII' of the Pennsylvania Alpine Club.

Perhaps the most interesting point in Revoil's chapter is his prophesy: "The Pigeons," he writes, "which cannot endure isolation and are forced to flee or to change their manners of living according to the rate in which the territory of North America will be populated, . . . will simply end by disappearing from this continent, and, if the world does not end this before a century, I will wager . . . that the amateur of ornithology will find no more Wild Pigeons except those in the Museums of Natural History." As a matter of fact the end came long before a century had elapsed!—W. S.

[1] Les Pigeons. An Article Dedicated to the Wild or Passenger Pigeon of North America. By Benedict Henry Revoil. Translated into English from the original French by William Benignus, New York, from the Volume "Chasses dans l'Amerique du Nord." English translation printed by Altoona Tribune Press, Altoona, Pennsylvania, 1927, pp. 1–20. Bulletin VIII, Pennsylvania Alpine Club.

**Huber on Birds of the Bear River Marshes.**—Mr. Wharton Huber spent the summer of 1927 on the Bear River Marshes of Utah, collecting specimens of Ducks and other birds for the Academy of Natural Sciences of Philadelphia and in the present paper[1] presents a popular account of the trip for the Academy's 'Yearbook.' The habits of the various species are described and some observations are made on the Duck sickness which affects Ducks at this locality.

The paper is illustrated by several excellent photographs of Avocets, Stilts, Willets, Pelicans, etc.—W. S.

**Leffingwell on the Pheasant.**—This initial publication[2] of the Charles R. Conner Museum of the State College of Washington includes much of Mr. Leffingwell's work on the Pheasant that was carried on at Cornell University. It treats the distribution and all phases of the life-history, and contains more original observations than any other American paper on the bird. The section on food habits, however, seems especially condensed and we trust that the author's investigations of the Pheasant will be published elsewhere in extended form. Some of the leading American publications omitted from the bibliography are:

Beebe, William. True Pheasants, in Pheasants, their Lives and Homes. Garden City, N. Y. 1926, vol. 2, pp. 39–66.

Burnett, W. L. A study of the Food Habits of the Ringed-neck Pheasant in Colorado. Circ. 31, Colo. Agr. Exp. Sta., Feb., 1921, pp. 5–21.

Field, George W., Graham, George H., and Adams, William C. Special report of the Board of Commissioners on Fisheries and Game * * * relative to the habits of those birds commonly known as pheasants. Mass. House Doc. No. 2049, Jan. 1914, 14 pp.

Gordon, Seth E. Rearing Ringneck Pheasants. Bull. 8, Pa. Board of Game Commissioners. 1925, 16 pp.

Job, H. K. Pheasant rearing, in Propagation of Wild Birds. Garden City, New York, 1923, pp. 75–90 and 276–280.

McAtee, W. L. Introduced Pheasants, in Some Common Game, Aquatic, and Rapacious Birds in relation to man. Farmers' Bul. 497, U. S. Dept. of Agric. 1912, pp. 11–12.

McAtee, W. L. Ring-necked Pheasant, in Propagation of Game Birds. Farmers' Bul. 1521, U. S. Dept. of Agric. 1927, pp. 13–35.

Maxson, Asa C. Feeding Habits and Food of the Ring-necked Pheasant. Circ. 31, Colo. Agr. Exp. Sta., Feb. 1921, pp. 23–30.

Oldys, Henry. Pheasant raising in the United States. Farmers' Bul. 390, U. S. Dept. Agr., 1910, 40 pp.

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[1] The Bear River Expedition. By Wharton Huber. Year Book of the Academy of Natural Sciences of Philadelphia, 1927, pp. 5–12.

[2] Leffingwell, Dana J., The Ringed-neck Pheasant—its History and Habits, Occasional Papers, No. 1, April 1928, 35 pp., 6 photographs.

Quarles, E. A. American Pheasant Breeding and Shooting. American Game Protective Assoc., 1916, 136 pp.

Simpson, 'Gene M. Pheasant Farming. Corvallis, Ore., 1927, 96 pp. —W. L. M.

**Encouraging Bird Enemies of Orchard Insects.**—Mr. T. T. Odell reports[1] upon attempts to increase the number of birds in pear orchards near Geneva, N. Y., as a means of control of the pear psylla. The experiment was largely a failure as the only birds responding to efforts to increase them were Flickers and Bluebirds, neither of which were found to feed upon the pear psylla. The birds feeding most freely on the pest, namely, the Chickadee, Golden-crowned Kinglet, and Red-breasted Nuthatch, could not be induced to nest in the orchards, during the period of this experiment.

The Myrtle Warbler, and White-breasted Nuthatch also were found to feed upon the pear psylla. No fewer than 200 psyllas were found in the contents of a single stomach of the Chickadee, and 150 in that of a Kinglet. Data are presented on 15 stomachs representing 11 species of birds, and notes are given on pellets of a pair of Screech Owls that wintered and nested in the orchard. Birds were rather prominent among the food items. In spite of discouraging results to date the author believes that if proper methods are used over a period of years worth while results can be accomplished. The Geneva Agricultural Experiment Station hopes to continue the work.—W. L. M.

**Barros on Food of Chilian Birds.**—In a four page leaflet[2] the author calls attention to the economic importance of birds and to the desirability of investigations of them in his region. He presents also observations on bird food based on examinations of a few stomachs each of five species, namely, *Egretta thula*, *Nothoprocta perdicaria*, *Podiceps americanus*, *Podiceps caliparoeus*, and *Aechmophorus major*.—W. L. M.

**Economic Ornithology in Recent Entomological Publications.**—Several entries under this head are here presented for the interest they have for ornithologists. Cane Grubs.—H. E. Box like other investigators of the subject gives credit[3] to bird enemies of these pests of sugar cane which cause an annual loss of three million dollars to cane growers of Porto Rico. He gives special credit to Blackbirds (*Holoquiscalus lugubris*) and strongly advocates the planting of more royal palms "as the crowns of these trees are the favorite nesting sites for blackbirds, and it is believed that an increase in the number of palms will in time lead to the augumentation of the numbers of these useful birds."

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[1] The Food of Orchard Birds with special reference to the Pear Psylla, Bul. 549, N. Y. (Geneva) Agr. Exp. Sta., 19 pp., 2 pls., 3 figs., Dec. 1927.

[2] Barros, Rafael, Apuntes Para el Estudio de la alimentacion de las aves de Chile, Rev. Chilena Hist. Nat., 31, 1927, pp. 262–265.

[3] Journ. Dept. Agr. Porto Rico, 9, No. 4, October 1925, pp. 310–311.

Satin moth (*Stilpnotia salicis*).—This is another addition to our already long list of insect pests introduced from the palaearctic region. Here, as there, it is a special pest of willows and poplars, and it is established in this country in four New England States and in Washington State. Although a newcomer it has been proved acceptable as food to native birds. The authors A. F. Burgess and S. S. Crossman in a recent bulletin[1] on the pest state that: "Birds undoubtedly consume many larvae of the satin moth. Mosher made some special studies to determine the relationship of birds to the satin moth and recorded the following species as feeding on them: Black-billed Cuckoo, *Coccyzus erythrophthalmus;* Oriole, *Icterus galbula;* Blue Jay, *Cyanocitta cristata cristata;* Starling, *Sturnus vulgaris,* and Catbird, *Dumetella carolinensis.* On numerous occasions the junior author has noted Blue Jays and Starlings apparently picking the small satin moth larvae from their hibernating webs on heavily infested poplar trees. Western Robins and Bats have been reported as feeding on the satin moth at New Westminster, British Columbia."

Pine Lappet (*Dendrolimus spectabilis*).—This is the most destructive pest of pine forests in Japan. In a study[2] of its bird enemies the author refers to Escherich's work (Zeitschr. f. angew. Ent., 2, 1915, p. 429) on avian predators on *Dendrolimus pini* in Europe, and to previous Japanese records of bird foes. These latter concern *Pica pica sericea, Passer montana saturatus,* and *Parus major minor.* By studies of stomach contents Kojima finds the last named species and *Aegithalos caudatus trivirgatus* to be important foes, and *Chloris sinica minor* a lesser enemy, of the pest.

*Lygus elisus.*—This abundant plant bug has become a real pest in the western cotton areas. In discussing[3] it, E. A. McGregor pays some attention to natural enemies. He quotes from Biological Survey records to the effect that 26 species of birds are known to feed upon plant bugs of the genus *Lygus* among which Swifts and Nighthawks appear to take these insects in largest numbers.

Cotton stainers (*Dysdercus* spp.).—J. G. Myers presents a useful review[4] of the records of bird and other enemies of cotton stainers. Although these insects figure frequently in the literature of economic entomology, it was not as pests, but as bearers of "warning coloration" that Myers was investigating them. Myers assembles records of nine kinds of birds preying upon cotton stainers, and of 3 species feeding upon other bugs of the same family. The utility of the "warning coloration" of these insects is not stressed, and seems questionable in view of the number of known enemies among various groups of vertebrates and invertebrates.

Fall Army Worm (*Laphygma frugiperda*).—This is not only a seriously destructive feeder upon cereal and forage crops, but is a particularly

[1] U. S. Dept. Agr. Bul. 1469, 1927, p. 15.

[2] Kojima, Toshibumi, Notes on some birds feeding on the pine lappet, *Dendrolimus spectabilis* Butler, Proc. Imp. Acad. [Japan], 3, pp. 291–295, May 1927.

[3] Tech. Bul. 4, U. S. Dept. Agr., July 1927, 14 pp., 7 figs.

[4] Ann. Ent. Soc. Am. 20, No. 3, Sept. 1927, p. 294.

interesting species in that it frequently disperses, breeds, and does injury throughout a great part of the United States, although it is a permanent resident only in the warmest parts of the southern states. Philip Luginbill, author of a comprehensive bulletin[1] on the insect gives a list of 13 species of U. S. birds known to feed upon the pest, and notes that the English Sparrow has several times been observed to eradicate local infestations. Bird enemies of the fall army worm in Porto Rico, the Virgin Islands, and San Salvador also are mentioned (pp. 87–88).

Pale western cutworm (*Porosagrotis orthogonia*).—This is a serious pest of grain crops in the northwest which feeds under-ground and is very difficult to combat. Observations on an effective bird enemy are given[2] as follows by C. N. Ainslie: "Among the birds of this region the Horned Lark, *Otocoris alpestris*, is the most active enemy of the cutworm. A wheat field near Mott, N. D., was dotted with small mounds of earth thrown up by this bird while digging out the cutworms, the outer skin having been evidently stripped off and eaten. The birds were still busy in this field and the process of digging out and eating the worms was repeatedly observed."—W. L. M.

## The Ornithological Journals.

**Bird-Lore.** XXX, No. 4. July–August, 1928.

Bonaventure's Gannets. By Claude W. Leister.

A Transatlantic Passage of Lapwings. By H. F. Witherby.—Reprinted from 'British Birds.'

The Migration and Plumage articles cover the Sapsuckers, with a color plate by Sutton. Dr. A. A. Allen has an excellent illustrated story of the Goldfinch.

**The Condor.** XXX, No. 4. July–August, 1928.

Saving the Parrakeets. By C. T. Metzger.—Calls attention to the rapid decrease of many Australian species and suggests the breeding of them in other parts of the world.

The Plumage of the Pine Siskin. By T. T. and E. B. McCabe.—An elaborate study of the molt from live birds handled in the process of banding. Several bird banding papers have recently dealt with the molt and few of the authors make any reference to Dr. Dwight's 'Sequence of Plumages and Molts of the Passerine Birds of New York,' our leading authority on the subject. It would not be a bad idea if some of the bird banding journals were to publish a list of papers and books that bird banders should read. Such knowledge would render their work more important and they would be better informed as to the problems still unsolved. Dr. Grinnell's comment on p. 256 is in line with our remarks and covers others beside bird banders.

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[1] Tech. Bul. 34, U. S. Dept. Agr., Feb. 1928, 91 p., 49 figs.

[2] Can. Ent., vol. LX, No. 7, July 1928, p. 161.

Life History of the Red-bellied Hawk. By James B. Dixon.—Excellent photos.

Yellowstone's Winter Birds. By M. P. Skinner.

The Status of the Cardinal in California. By Alden H. Miller.—A small colony has become established in the lower San Gabriel River bottom, in southern California and the only specimen available seems nearest to true *cardinalis*.

In 'Field and Study.' Dr. Loye Miller proposes a new genus, *Wetmoregyps* (p. 255), for the fossil bird described by him as *Morphnus daggetti*.

**The Wilson Bulletin.** XL, No. 2. June, 1928.

Alexander Wilson: A Sketch. By Mrs. H. J. Taylor.—This is simply a compilation from previous publications and as is usually the case a few additional errors have crept in. New Castle, where Wilson landed, is in Delaware not New Jersey and it should have been stated that both Old Swedes Church, where he is buried, and Gray's Ferry where he taught school are both well within the limits of the present city of Philadelphia.

The writer deplores the quarrel and strife between Wilson and Audubon and yet presents the old time worn story again. As a matter of fact there is no evidence of any quarrel between them. The "quarrel" was between George Ord and Audubon after Wilson's death.

Notes on a Collection of Hawks from Schuylkill County, Pennsylvania. By George Miksch Sutton.—Gunners from Reading and nearby towns shot ninety Sharp-shinned Hawks, sixteen Goshawks, eleven Cooper's Hawks, thirty-two Red-tails, and two Duck Hawks, all on October 22, 1927, at a point in the Blue Mountain, a slaughter which rivals that at Cape May, N. J. Instead of eating their prey, however, like the hardy Jerseymen do, the gunners submitted their birds to Mr. Sutton who has prepared some interesting notes on their plumage, molt, weight, food, etc.

It is useless to again take up the side of the Hawks, for so long as sportsmen prepare the game laws, Hawks will be destroyed, but attention might be called to the fact that the food of the Red-tails, as might be expected, show them to be more beneficial than injurious, confirming the findings of the late Dr. Warren and of the U. S. Biological Survey, yet the Pennsylvania Game Commission persists in hastening the extermination of these splendid and useful birds.

Individuality in Bird Song. By Lucy V. B. Coffin.

Birds of Eastern McKenzie County, North Dakota. By Adrian Larson.

**Bulletin of the Northeastern Bird-Banding Association.** IV, No. 3. July, 1928.

Notes on the Cedar Waxwing. By C. J. Maynard.

The Biography of a Cedar Waxwing. By Helen G. Whittle.

History of a Cedar Waxwing Family. By M. J. Littlefield and F. Lemkau.

A New Need in Natural History. By Glover M. Allen.—Research

stations in the wilds; with an appeal for one in Africa before its fauna is further decimated.

Bird Banding in Japan. By F. C. Lincoln.

History of a Female Hooded Warbler. By T. Donald Carter.

Color Phases of the Purple Finch. By Helen G. Whittle.

Some Manifestations of Age in Male American Goldfinches. By C. L. Whittle.

**The Oölogist.** XLV, No. 6. June, 1928.

Notes on the Birds of Stamford, Connecticut and Vicinity. By Paul G. Howes.—An annotated list of 225 species.

**The Gull.** X, Nos. 4, 5, 6, 7. April to July, 1928. [Audubon Association of the Pacific.]

Are Shore Birds Diminishing? By C. R. Smith. (April.)

American Egrets Wintering in the Suisun Marshes. By C A Bryant. (April.)

Bird Life in Forest Hill, San Francisco. By R. M. Leggett. (June.)

Mother Coot. By C. R. Smith. (July.)

**The Cardinal.** II, No. 4. July, 1928.

Notes on the Flight of the Chimney Swift. By G. M. Sutton.—An extremely valuable paper presenting the most accurate and original study of the Swift's flight that has yet appeared. Mr. Sutton refers incidentally to the bird breaking off dead twigs for its nest *with the feet.* We wonder if he actually saw this operation. It was the subject of much controversy in some of the bird journals some thirty years ago and it seemed that the concensus of opinion was that the birds grasped the twig with the beak. [See 'Nidologist' IV, p, 80; 'Osprey' I, p, 122 etc.]

John Burroughs in Pennsylvania. By Bayard H. Christy.

**The Murrelet.** IX, No. 2. May, 1928. [Mimeographed Journal.]

Relative Abundance of Bird Species in Southeastern Idaho, Fresno, Calif., Santa Clara Co., Calif. and King Co., Wash.

A Brief Glimpse of California Bird Life. By T. D. Burleigh.

**The Ibis.** IV, No. 3, July, 1928.

On the Birds of Central Spain, with some Notes on those of Southeast Spain. By H. F. Witherby.

Some Problems of Instinct and Abnormality in Bird Behaviour. By the Marquess of Tavistock.

A Note on Asiatic Members of the Genus *Acrocephalus.* By Hugh Whistler.

Some Further Notes from the Egyptian Deserts. By R. E. Moreau.

The Genus *Artisornis.* By H. Friedmann.

On the Migratory Habit of *Lanius c. cristatus.* By S. C. Law.

Some Biological Problems Connected with the Himalaya. By R. Meinertzhagen.—An elaborate contribution to zoogeography. He divides

the region into four faunal areas; the afforested area from southern and eastern Kashmir to Bhutan; the Tibetan Plateau; Kashmir; and the Transitian Zone. The first he regards as Oriental and not Palaearctic and considers that it was colonized from western China, while the Tibetan Plateau belongs definitely to the Palaearctic Region, and the Kashmir sub-region is probably of similar origin. In the voluminous appendices various groups of birds are considered with regard to their distribution accompanied by maps. In these we find that certain Nuthatches of China, Asia Minor and Corsica are regarded as subspecies of the North American *Sitta canadensis* while *S. przewalskii* of Chuanche and *S. leucopsis* from Kulu, etc. as subspecies of *S. carolinensis*. It would be interesting to know if the relationship is really so close.

**Bulletin of the British Ornithologists' Club.** CCCXXIV. June 7, 1928.

A Review of Recent Work on Sex in Birds. By B. W. Tucker.—An excellent review of the whole subject.

Meinertzhagen describes a new Pigeon and a Dove from the Dakhla Oasis, Lybian desert and Ticehurst a Starling from Persia.

**Bulletin of the British Ornithologists' Club.** CCCXXV. July 10, 1928.

Lord Rothschild exhibited the hitherto unknown egg of the flightless Rail, *Atlantisia* as well as eggs of many other Rails and skins of various species extinct or nearly so. J. Delacour and P. Jabouille present descriptions of twenty-one new birds from Indo-China and H. Lynes describes *Cisticola robusta omo* (p. 136), S. W. Abyssinia.

**British Birds.** XXII, No. 1. June, 1928.

Notes on the Nesting of the Slavonian Grebe in Scotland. By Seton Gordon and Audrey Seton Gordon.—With good photographic illustrations.

A Transatlantic Passage of Lapwings. By H. F. Witherby.—The birds are supposed to have left northern England for the south of Ireland where they winter, on the advent of sudden cold weather, and being carried beyond the eastern coast of Ireland by the strong east wind managed to keep up until the coast of Newfoundland was reached.

Manx Ornithological Notes, 1927. By P. G. Ralfe.

**British Birds.** XXII, No. 2, July, 1928.

The Fighting Methods of the Great Crested Grebe. By Donald Gunn.—Grasping each other's bills each bird tries to force its opponent under the water.

Some Breeding Habits of the Mistle Thrush in Cornwall. By B. H. Ryves.

Notes on a Discourse on the Emigration of British Birds: in 1780. By H. S. Gladstone.

**British Birds.** XXII, No. 3, August, 1928.

Notes on the Birds of Puffin Island. By W. Aspden.—At the extreme eastern point of Anglesey.

An Autumn Habit of the Rook. By Rev. E. U. Savage.

**The Oologists' Record.** VIII, No. 2. June, 1928.

The Breeding Birds of a South African Farm. By H. W. James.—104 species.

The Breeding Birds of an English Parish. By Wm. Rowan.—70 and 87 species and 86 for an eastern locality Manitoba.

Nest of the Golden Eagle. By J. K. Jensen.— New Mexico.

Breeding of *Centropus superciliosus loandae* and *Hagedashia hagedash nilotica* in Ugandae. By C. R. S. Pitman.

Eggs of the Fringillidae. By K. L. Skinner.—Additional to a previous paper.

**The Avicultural Magazine.** (Fourth Series.) VI, Nos. 6 to 8. June, July and August, 1928.

Plate of *Pyrrhura rhodogaster;* Diving Ducks by Delacour; Jungle Fowl, by D. Seth Smith. [June.]

Color Plate of *Melopsittacus undulatus* and varieties; Some Notes on Egyptian Birds in Giza, by G. H. Gurney. [July.]

Color Plate of Agapornis, Psittacula and Loriculus; The Two Most Popular Cagebirds of China, by Alex. Hampe.—(*Trochalopteron canum* and *Zosterops simplex*); Cariamas, Trumpeters, Sun Bitterns, Courlans and Kagus, by Delacour, illustrated with excellent photographs; the Blue Touracou, by L. M. Seth Smith. [August.]

**The Emu.** XXVII, Part 4. April, 1928.

Discovery of the Winiam Field Wren (*Calamanthus winiam*). By A. G. and A. J. Campbell.

Notes on the Powerful Owl (*Ninox strenua*). By David Fleay.

Bird-Life of the Bunker and Capricorn Islands. By W. MacGillivray.—Beautiful photographs of the Noddy and Crested Terns.

Nesting of the Bell-Miner. By C. L. Lang.

Notes on Some Victorian Birds. By Frank E. Howe.—Beautifully illustrated with photographs.

Birds Observed During the R. A. O. U. Camp-Out at Nornalupe, S. W. Australia. By E. Ashby and A. S. LeSouef.

A Wave-guarded Kingdom of Birds. By Tom Iredale.

Birds of the Grampean Range, Victoria. By Marc Cohn.

Australian Birds Occurring in New Guinea. By W. B. Alexander.—List of nine species known to occur in New Guinea but not so recorded in the Australian 'Check-List.'

Bird Notes from the Australian Museum. By J. R. Kinghorn.

**The Emu.** XXVIII, Part 1. July, 1928.

A Critical Description of Some Recently Discovered Bones of the Extinct Kangaroo Island Emu (*Dromaius diemenianus*). By A. M. Morgan and J. Sutton.—Numerous photographs of bones and of pictures of the bird.

Notes Made During a Holiday Trip to New Caledonia. By J. A. Leach. —A photograph of the Kagu with wings spread is among the illustrations.

A Visit to Mutton Bird Rookery, Cape Woolamai, Phillip Island. By D. Dickson. With further note by A. G. Campbell.

Relationship of the Avifauna of western Australia. By Robert Hall.

Bird Notes and Birds' Notes. By C. M. Bryant.

Notes Made During a Visit to the Bogong High Plains, Victoria. By Miss A. Paterson.

Fauna and Flora Reserves in Western Australia. By E. Ashby.

Movements of Crows in Western Australia. By D. L. Serventy.

The admirable photographs in both of the recent issues of 'The Emu' are noteworthy.

**South Australian Ornithologist.** IX, Part 6. April, 1928.

Extracts from the report of the Prickly-pear Commission show that from February 1, 1926 to June 30, 1927, 57,392 Emus and 52,573 Emu eggs were destroyed as well as 8247 Scrub Magpies, 51,033 Crows. It is now fortunately decided that the introduced cactus destroying insects probably have the spread of the cactus in control so that the slaughter of the birds is to be discontinued on December 1, 1928.

A Trip to the South-East of South Australia. By F. E. Parsons.

**Revue Francaise d'Ornithologie.** 20, Nos. 227–228, April–May, 1928. [In French.]

The Birds of Paris. By M. Legendre.

Recent Changes in the Nomenclature of Birds of the French Fauna. By J. Rapine.

**L'Oiseau.** IX, No. 1. January; No. 2, February; No. 3, March; No. 4, April; No. 5, May; and No. 6, June, 1928. [In French.]

Vol. III of 'Les Oiseux' runs through these numbers—Herons, Storks, Spoonbills and Ibises, the Cariamas, etc. and the Bustards by Delacour. The Cranes by Marquis of Tavestock, and the Shore-birds by Delacour and Bailey. Other articles are:

The Terrestrial Cuckoo of Renauld (with a colored plate). By J. Delacour. [January.]

A Collection of Living Ducks in California. By J. Delacour.—DeLaveaga's collection at San Mateo. [January.]

Impressions of an Naturalist on a Trip to Persia. By J. Berlioz. [April.]

Notes from the Far East. By J. Delacour. [April, May and June.]

A Monograph of the Blue Thrush (*Monticola s. solitarius*). By M. Legendre. [June.]

The Birds of the Hawaiian Islands. By J. Delacour. [June.]

**Le Gerfaut.** 18. Fasc. 1, 1928. [In French.]

Some Interesting Nests Found in 1926. By A. Galasse.—In Belgium. Other Local notes on Belgiam birds.

**Journal für Ornithologie.** LXXVI, Heft 3. July, 1928. [In German.]

The Geographic Variation of Phylloscopus trochilus (L.). By Fin Salomonsen.—Four races recognized.

Observations on the Willow Tit (*Parus atricapillus salicarius.*) By E. Mayr.

The Rough-legged Hawk as a German Breeding Bird. By W. Salzmann.

Report on Bird Banding in Estland. 1922–1927. By M. Harms.

On the Systematics of the Redstarts. By B. Stegmann.—*Phoenicurus ochruros xerophilus* (p. 501) is described as new from the western Kwenlun Mountain system.

My Journey through northeast Brazil. II. Biological Observations. By H. Snethlage.—Distributional table of 449 species and a table of comparisons with lists of Beebe, Allen and others for various localities in South America.

New Species and Subspecies of Birds from the Interior of Brazil. By E. Snethlage.—*Knipolegus aterrimus franciscanus* (p. 581); *Phylloscartes roquettei* (p. 582); *Serpophaga araguayae* (p. 583); *Xenoctistes mirandae* (p. 584); *Thamnophilus caerulescens ochraceiventer* (p. 585); *Cercomacra nigrescens ochrogyne* (p. 586); *C. ferdinandi* (p. 586).

Contribution to the Avifauna of Kara-kum Desert. By S. J. Snigirewski.—*Muscicapa striata sarudnyi* (p. 595) "nom. emend."

**Ornithologische Monatsberichte.** 36, No. 4. July–August, 1928. [In German.]

The Increase and Decrease of Storks. By Werner Hagen.

Corrections to the List of Bali Birds. By E. Stresemann.

The Hostility of Captive Birds. By Fritz Braun.

Two New Forms of Acrocephalus from the Indo-Malay Region. By F. Salomonsen.—*Acrocephalus stentoreus harterti* (p. 119) and *A. s. siebersi* (p. 119).

**Beitrage zur Fortpflanzungsbiologie der Vögel.** 4, No. 4. July, 1928. [In German.]

On the Ural Owl. By W. Christoleit.

Must the Bird Learn Its Song? By B. Hoffmann.—Scott's observations on Baltimore Orioles in Captivity are considered at Length, but the case of the House Finch described by Miller in 'The Condor' which sang the song of its species without ever having heard it is not referred to.

Remarks on the Nehrkorn Catalogue. By M. Schonwetter.

The "Star" of the Bluethroat. By O. Natorp.

The Nesting Habits of *Centropus javanicus.* By A. Spennemann.

**Berichte des Vereins Schlesischer Ornithologen.** XIV, Heft. 1. May, 1928. [In German.]

William Wolf (1838–1910) the Ornithologist of Muskau. By B. Gerlach. and O. Herr.—With a synopsis of his observations on the nesting of birds, Cuckoo's eggs, etc.

Theoretical and Practical conclusions on the Food Habits of Birds. By Dr. V. Vietingoff-Riesch.

The Status and the Problems of the Food of Our Hawks and Owls. By O. Uttendorfer.

Ornithology of Schlesia. By M. Sclott.

**Der Ornithologische Beobachter.** XXV, Heft 9. June, 1928. [In German.]

A memorial number to the late Albert Hess, President of the Swiss Society for the Study and Protection of Birds.

Report of the Swiss Bird Observer at Sempach. By A. Schifferli.—Bird Banding Records.

**Der Ornithologische Beobachter.** XXV, Heft 10, July, 1928. [In German and French.]

Addition to the Life History of the Flamingo. By R. Poncy.—Continued in August issue.

**Ornis Fennica.** V, Nos. 1 and 2, 1928. [In Finnish.]

Several articles dealing with the birds of Finnland.

The 1928 "Sonderheft" is devoted to an extensive paper by Dr. Ivar H. Hortling on 'Ornithological Studies at Oulujarvi-See (Uleatrask),' containing a well annotated list of 177 species and numerous illustrations.

**Danske-Fugle.** 9, No. 1. 1928. [In Danish.]

Devoted entirely to reports on the banding and recovery of the Lapwing,Greater Titmouse and Song Thrush, and maps showing their probable routes of migration. No less than 697 Lapwings were banded from 1919 to 1927 and there were 23 returns.

**Ardea.** XVII, Afl. 1-2. 1928. [In Dutch.]

The Summer Plumage and Development of the Gonads in the Knot. By J. Verwey.

Observations on Breeding and Migratory Birds in Holland, 1926 and 1927. By G. A. Brouwer and F. Haverschmidt.

Observations on Birds of the Mediterranean and Atlantic Oceans. By G. J. vanOordt.—Naples to Tunis and to Amsterdam.

On the pigmentation of the egg shell in the oviduct. By P. L. M. Tammes.

The Crossbill Invasion in Holland, 1927. By F. Haverschmidt.

**Uragus.** Part VII, 1928, No. 2. [In Russian.][1]

[1] Contributed by Dr. T. S. Palmer.

On the distribution of some birds in the Kuznetsky Alatau [Mountains.] By W. Troizki and I. Salesski.

Invasion of the Rosy Starling (*Pastor roseus* L.) in the Yenisei Valley [in 1911]. By N. Fedorow.

The Wood Wren, *Phylloscopus sibilatrix* (Bechst.) in the region of Omsk. By I. Dolguschin and A. Markowski.

Interesting Discoveries in the Tobolsk District. By M. Tarunin.

Biological Observations on *Chrysomitris spinus* (L.) near Tobolsk. By M. Tarunin.

On the arrival of some migratory birds in the Altai Region. By P. M. Salesski.

The Birds of the vicinity of Semipalatinsk [310 species]. By V. A. Hacklow and V. A. Selewin.

Partial Albinism in the Snipe, *Capella media*, and in the Wagtail, *Budytes citreola werae* Buturl. By G. A. Welishanin.

Catalogue of a Collection of Birds made by E. Pilman near Nowosibirsk. By V. Hachlow.

Miscellaneous Notes, including list of birds banded.

### Ornithological Articles in Other Journals.

**Hantzsch, Bernhard.** Contribution to the Knowledge of the Avifauna of Northeastern Labrador. (*Canadian Field Naturalist*, April, 1928.)—Continued in May issue.

**Kindle, E. M.** Wild Life of Jasper Park. (*Canadian Field Naturalist*, May, 1928.)

**Nash, J. Kirke.** The Rookeries of Greater Edinburgh and Midlothian. (*Scottish Naturalist*, No. 171, May–June, 1928.)

**Ritchie, James.** The Garganey.—An Addition to the Breeding Birds of Scotland. (*Scottish Naturalist*, No. 171, May–June, 1928.)

**Stewart, Walter.** Studies of Some Lancashire Birds. (*Scottish Naturalist*, No. 171, May–June, 1928).

**Paterson, John.** Some Records of the Smew from the Clyde Area. (*Scottish Naturalist*, No. 171, May–June, 1928.)

**Chapman, F. M.** The Homes of a Hummer. (*Natural History*, May–June, 1928.)—Nesting of the Violet-throated Hummingbird at Barro, Colorado, Canal Zone.

**Burden, William D.** Wings of the Yalu. (*Natural History*, July–August, 1928).—Frequent mention of birds on an expedition for sheep on the Sino-Mongolian frontier.

**Grimes, S. A.** The Carolina Wren. (*The Florida Naturalist*, July, 1928.)

**Weston, Francis M.** West of the Apalachicola—III. (*Florida Naturalist*, July, 1928.)—Numerous bird notes.

**Bailey, Alfred M.** Bird Life Among Alaskan Islands. (*America Forests and Forest Life*, July, 1928.)

**Bowdish, B. S.** Cliff Swallows in New Jersey. (New Jersey Audubon Bulletin, No. 40, August, 1928.)—A prize is offered for the location of the largest colony in the state. The species, "once abundant in New Jersey," is rapidly disappearing. As a matter of fact the bird has not been found as a breeder in southern New Jersey, so far as we are aware, within the past forty or fifty years and in Pennsylvania seems to breed almost entirely in the mountainous sections. (Ed.)

**Borman, F. W.** Birds in Egyptian Gardens. (*Bird Notes and News*, Summer Number, 1928.)

**England, George Allan.** Bird Key. (*Saturday Evening Post*, September 1, 1928.)—On the Tortugas Bird Reservation, in the Gulf of Mexico.

## NOTES AND NEWS.

HANS FRIEDRICH GADOW, elected as a Corresponding Member of the American Ornithologists' Union in 1884 and an Honorary Fellow in 1916, died at his home, Cleramendi, near Cambridge, England, May 16, 1928, at the age of 73. He was the eldest son of M. L. Gadow, a Prussian Inspector of Forests and was born in Pomerania, Germany, March 8, 1855. His education was received at Frankfurt-on-Oder and at the Universities of Berlin, Jena, and Heidelberg. At Jena he studied under Ernst Haeckel and at Heidelberg under the eminent anatomist Carl Gegenbauer, from whom he evidently received the inspiration of much of his later work. Shortly after his graduation he was invited to London by Dr. Günther to assist in the preparation of the British Museum 'Catalogue of Birds.' Here he remained two years and prepared Vol. VIII, containing the Titmice Shrikes, and Nuthatches, and Vol. IX, the Sunbirds and Honey-eaters.

On the resignation of Osbert Salvin as Curator of the Stricklandian collections at Cambridge, in 1884, Gadow was appointed to the position and also made Lecturer on the Morphology of Vertebrates. He had now found his place and in these two positions began what proved to be his life work. He became naturalized, joined the British Ornithologists' Union in 1881, was elected a Fellow of the Royal Society of London in 1892, and married Miss Clara Maud Paget, daughter of Sir George E. Paget, Regius Professor of Physics at Cambridge.

Gadow's work was chiefly associated with anatomy and morphology and with the classification of the higher groups of vertebrates. The list of his publications began with a paper on the digestive system of birds in 1879, and one on the myology of the pelvis and hind limb of Ratite Birds in 1880. Among his most important publications are the volumes on the 'Classification of the Vertebrata,' 1898, a translation of Haeckel's work entitled 'The Last Link,' 1898, and the volume on 'Aves' in Bronn's Thier-Reichs begun by Selenka in 1867 and completed by Gadow in 1884–93. Mention should also be made of the volume on 'Reptiles and Amphibia' in the Cambridge Natural History (1901). He wrote two popular books of travel: 'In Northern Spain,' 1897, and 'Through Southern Mexico,' 1908, containing an account of his experiences in these countries. To these are to be added his numerous articles on anatomy in Newton's 'Dictionary of Birds' of which he was one of the editors, and many papers contributed to the 'Philosophical Transactions' of the Royal Society, the 'Proceedings' and 'Transactions' of the Zoological Society of London, Ibis, the 'Journal fur Ornithologie' and other journals.

The names of Gadow and Furbringer are closely associated with the classification of vertebrates. Not only were these authorities contemporaries and friends but they were more or less associated in their investi-

gations, and the results of their work form the basis of the present classification of birds. In fact Gadow's classification was largely followed by Ridgway in his 'Birds of North and Middle America' (See Vol. I, p. 6), and by Knowlton in his 'Birds of the World.'—T. S. P.

Mrs. Annie Constance Meinertzhagen, a Corresponding Fellow of the American Ornithologists' Union since 1919, met a tragic death at her estate, Swordale, near Evanton, Ross-shire, Scotland, July 6, 1928. With her husband, Colonel Meinertzhagen, she was returning from a revolver target practice and was examining her revolver supposing it to be empty. "Her husband who was walking ahead, was startled by an explosion and turning round saw his wife fall; and she was found to be dead."

Annie Constance Meinertzhagen was the elder daughter of the late Major and Mrs. Randle Jackson of Swordale and was born June 2, 1889. At an early age she developed a taste for natural history, especially birds, and after leaving school she and her sister, Miss Dorothy Jackson, the entomologist, studied zoology under Prof. E. W. Macbride for three years at the Imperial College. In 1915 she was elected an Honorary Lady Member of the British Ornithologists' Union, and on March 3, 1921, she married Colonel Richard Meinertzhagen.

Miss Jackson's early work took the form of photography and field work, especially with waders and ducks. Under her maiden name she contributed to 'British Birds' beginning in 1908, and the following year began a series of notes contributed to the 'Annals of Scottish Natural History.' She was also the author of a series of articles on moults of British ducks and waders which formed the foundation of her work on the plumages of these birds contributed to the 'Practical Handbook of British Birds.' In preparing this material she not only examined all available specimens in England but spent three weeks in Copenhagen examining the collection of ducks belonging to Dr. E. L. Schioeler, and part of her honeymoon in working on the birds in the Rothschild Museum at Tring. Under her married name, Mrs. Meinertzhagen has published a number of important papers in the 'Ibis,' including a 'Review of the Genus *Burhinus*' in 1924, a 'Review of the Subfamily *Scolopacinae*' in 1926, and a 'Review of the Family *Cursoridae*' in 1927. In 1925 she went to India with her husband and from Bombay they went up to Sikkim and southern Tibet to see what birds wintered in that region, and returned via Darjeeling to London early in the following year. Mrs. Meinertzhagen was one of the active, talented, Lady Members of the British Ornithologists' Union who have made substantial contributions to systematic ornithology, geographic distribution and migration. Her sudden death in the height of her activity is a serious loss not only to her family and friends but to both the British and the American Ornithologists' Unions. A more extended notice may be found in 'British Birds' for August, 1928, the source of most of these facts.—T. S. P.

DR. JOHN SMITH DEXTER, Prof. of Biology in the University of Porto Rico, at Rio Piedras, P. R., and an Associate of the American Ornithologists' Union since 1919, died April 19, 1928, in the 43d year of his age. He was born at Schioctin, Wis., August 21, 1885 and graduated from Ripon College, Wis., in 1908. The following year he received the degree of M.S. from the University of Wisconsin, and in 1914 the degree of Ph.D. from Columbia University. Since leaving the University of Wisconsin he has filled the chair of biology in several institutions including Northland, Olivet and Northwestern Colleges, and the Universities of Saskatchewan and Porto Rico. He has been connected with the last named institution since 1923. While located at Saskatoon, he contributed to 'The Auk' some 'Notes on Birds of the Beaver River Valley' and on 'The European Gray Partridge in Saskatchewan.'—T. S. P.

REV. GEORGE BENNETT, an Associate of the American Ornithologists' Union since 1913, died at McGregor, Iowa, August 18, 1928, in the 77th year of his age. He was born in England, on Carlean Farm, near Camborne, Cornwall, and had resided in Iowa for some years. Since his retirement from the ministry, a few years ago, he has devoted his attention largely to conservation. He was one of the founders of the American School of Wild Life Protection, established in 1919, which has a summer term of about two weeks each year at McGregor. This school, the outgrowth of an idea conceived about 14 years before, is a unique institution and has been very successful. Mr. Bennett was a contributor to 'Iowa Conservation' for some years and was publisher of the magazine 'Wild Ways.' He was an enthusiastic conservationist, a field agent and lecturer of the Iowa State Fish and Game Commission, and contributed articles to the press and delivered many lectures on the protection of birds and game. He is survived by his wife and four children, Mrs. W. E. Butler of Stamford, Conn.; Mrs. A. M. Nelson of Falconer. N. Y.; George Bennett, Jr., of Nutley, N. J.; and H. Arnold Bennett, of Buffalo, N. Y.—T. S. P.

ALBERT LANO, an Associate of the Union since 1917 (and 1890–1905), died at his home in Fayetteville, Arkansas on July 3, 1928 after an illness of some six weeks, having been stricken with heart trouble in May last.

Mr. Lano was born on January 2, 1860, at Chaska, Minnesota. His early life was spent on a farm but he later studied pharmacy in Minneapolis and Milwaukee and went into business in several towns in Minnesota removing to Fayetteville in September, 1912.

From early life he was deeply interested in birds and formed a large and valuable collection which he gave to the University of Minnesota when he left the state. He was known to ornithologists all over the country with whom he corresponded and exchanged specimens, and he published not a few notes in 'The Auk' and other journals.

In Fayetteville, Mr. Lano took an active interest in nature study in the

schools and gave many lectures on birds, to the boys and girls, being known to them all as the "bird man." He was also a member of the Masonic and Eastern Star lodges for over forty years.

Mr. Lano married Miss Ida Harmon who, with three daughters, survives him.—W. S.

ALBERT HESS, of Berne, president of the Swiss Society for the Study and Protection of Birds, died of heart failure on May 13. 1928.

He was deeply interested in bird protection and in the activities of the Society which he had helped to found, contributing many articles on Swiss birds to its official organ the 'Ornithologische Beobachter.'

He was born on October 14, 1876, and was thus in his fifty-second year.

MISS MARY STELLA CLARKE, an Associate of the American Ornithologists' Union met a mysterious death at Cape May, N. J., on January 14, 1927, at the age of about 64. She had arrived that evening,—a dark stormy night—and her body was found frozen on the beach the next day.

She had been accustomed to spend the winters in Washington, D. C., and the summers in the mountains or at the sea shore and had been for many years interested in bird study. In early life she had been a teacher and a nurse.—T. S. P.

THERE appeared in the 'Military Surgeon' of May 1927, some recollections of Dr. Elliott Coues written by Lieut.-Colonel H. C. Yarrow, who was, I believe, formerly associated with him in the United States Army and which probably have been seen by but few ornithologists so that they will bear reprinting. Lt.-Col. Yarrow says in part:—

"Climb up with the writer to the tallest tower of the Smithsonian and entering a small corner room we should find seated at a desk a man in his shirt sleeves, writing away as if his life depended upon his work. He was a handsome man of less than forty. with bushy, brown hair and brown beard, only ceasing his work occasionally to roll a cigarette, the tobacco for which he took from a calvarium on the table before him.

This was Elliott Coues, and at the particular time of which we write he was attached to the Geological Survey under Major Powell. At the moment he was writing a history of the amatory intercourse of the birds of the Southwest, more particularly the Grouse. He would invite us to be seated and would perhaps call our attention to an interesting mammal or bird which lay on the table before him. Coues was a man of most varied intellectuality. One hour he would write a learned dissertation on the tail feathers of the humming bird, and the next hour pen a wonderfully humorous sketch entitled "Grace before Meat" or a facetious article entitled "Buffalo Chips." The latter paper was made part of a special edition of *Forest and Stream* so highly was it thought of.

It was the custom of a number of men connected with the different scientific surveys to meet at one or the other of the offices and talk over their triumphs past or to come when they took the field again. On one

of these Sunday mornings a discussion took place as to who was the best taxidermist, that is to say, preparer of mammal or bird skins.

The writer protested that his assistant, Mr. H. W. Henshaw, could not be excelled by anyone in the world in preparing this special line of work. Some one, however, declared that Dr. Coues was the better of the two. However, to make a long story short, a trial was to take place between these two gentlemen the following Sunday. Accordingly, material having been prepared and supplied in the form of English Sparrows, they sat down side by side and commenced their work. Mr. Henshaw had skinned his bird and prepared it for purposes of study in one minute and thirty-five seconds. Dr. Coues required one minute and forty seconds. So it will be seen that these two great men could hardly be considered as rivals.

Coues, it is thought, was the best known ornithologist, with regard to United States birds, of any man in the world, and his various books which he published from time to time will show that this claim is worth consideration. At one time he was appointed professor of anatomy at Columbian University and there was always a crowd of students to hear him lecture. He was most entertaining and most convincing in his arguments. One evening the writer went there wishing to hear a lecture on a special subject, and found the professor absent from his desk. He presented himself, however, within a few minutes and made an apology to the class for his lateness, by stating that a most interesting event had just occurred in his family and its name was William Drinkard. There was a burst of applause from the students at this statement because William Drinkard had been the predecessor of Coues in the anatomical chair.

A wonderful man, full of ability, but with a slant in certain directions that interfered very seriously with his duties as a medical officer of the United States Army."—W. H. Bergtold.

The International Committee for Bird Preservation held its third biannual meeting in Geneva, Switzerland, May 21–22, 1928, under the chairmanship of Dr. T. Gilbert Pearson, President of the National Association of Audubon Societies. Representatives from sixteen countries were present. The objects of the Committee are set forth briefly in the following extracts from its Declaration of Principles.

We believe that wild-bird life is of great importance in the world in helping to preserve the balance between species which nature is constantly seeking to adjust, that birds have a great importance for science, exercise a great esthetic influence on all right-minded people, and are of great value to mankind as food, as destroyers of rodents and injurious insects, and as incentives for reasonable field sports.

We believe that, through ignorance, selfishness, and from an undue desire for gain, mankind is reducing the number of birds in many countries at an alarming rate, having, in fact, already exterminated from the earth various interesting and valuable species.

We are in sympathy with all reasonable methods taken to increase the number of game-birds in order that the surplus may be used for food or sport. We commend the study of the food-habits of wild birds, in relation to agriculture, horticulture, and forestry, and the publication of the information thus obtained in order that the people of the world may acquire a more accurate conception of the value of bird-life.

We rejoice in all efforts being made by educational institutions of whatever nature, as well as by thousands of private individuals, in imparting to the general public knowledge regarding the appearance, habits, activities, and songs of wild birds, so that adults and children alike may be taught to appreciate the esthetic value of the living bird.

The chief result of the conference was the preparation of the following recommendations for official action:

That to protect migratory birds during the period of their spring migration and while engaged in rearing their young, all shooting, trapping, or other destruction of birds, together with their sale or exposure for sale, shall cease not later than March 1, in Europe, Asia, northern Africa, and North America, and not later than September 1 in countries in the southern hemisphere, and that such prohibition shall continue until the opening of the shooting season in the autumn. In countries north of 56° latitude north, moderate spring shooting of some species might be allowed through Government license for about twenty days on account of their different climatic conditions.

The Committee believes that, owing to the diversity of legislation and of custom in the different countries, the best chance of promoting international agreement which would be acceptable to a large number of states and also effective for the protection of birds, is to confine its recommendations to two very definite proposals which it suggests might be considered by an international conference.

The first proposal is intended to protect migratory birds during what is, for them, the most important season of the year, namely while on their way to, and while in, their breeding-haunts; but the Committee recognizes that there must be some exceptions to complete protection of every species and this must be left for future settlement.

The second proposal is intended to prevent the destruction of birds by oil-pollution in navigable waters.

A most interesting program of papers was presented at the meeting including the address of the President and discussions of the need of bird protection and methods employed in Sweden, Hungary, Italy, America, Switzerland, Holland, France, Czechslovakia, Germany, Belgium, Norway, Bulgaria, New Zealand and Japan.

At a dinner held on May 21, Dr. T. Gilbert Pearson was reelected chairman and Dr. J. M. Dersheid of Brussels, was chosen European Secretary. It was decided to hold the next meeting in connection with the International Ornithological Congress to convene in Amsterdam, Holland, in 1930.

It is a great satisfaction to all interested in bird protection to realize that we are now actually in a position where international action is a probability and if the League of Nations can be induced to take the matter up, the goal would appear to be won. It seems hopeless to expect the preservation of the shore birds of the western hemisphere, no matter how earnestly Canada and the United States may labor if the birds are to be slaughtered in winter in South America, and similar conditions in the Old World emphasize the necessity of international and universal action.

The International Committee deserves all praise for the progress that has been made in so short a time but immediate action in many cases is needed if certain birds are to be saved from extermination.

THE Biological Survey announces a general readjustment of the season on Woodcock and a reduction of the period to one month in any one state. Whether even this restriction will save the bird from extermination is open to question. In an interesting summary of the situation in 'Nature Magazine' for August, Mr. E. A. Preble calls attention to the fact that New York allows its 300,000 licensed hunters 24 Woodcock each, if they can find them, and that Pennsylvania's 800,000 licensed hunters kill about 30,000 Woodcock per year.

From the official returns of New York, comparing Woodcock killed with Woodcock hunters, it took twelve men fortified by dogs, guns, etc., to kill each Woodcock in 1921; fourteen, in 1922; twenty-one in 1923, and eighteen in 1924. Later figures are awaited with interest, and when we learn that there are now 5,750,000 licensed hunters in the United States we wonder how long any game can survive, especially with the rapid conversion of wild lands to farming or other purposes.

DR. DAYTON STONER, formerly of the University of Iowa, is now an Associate Entomologist in the U. S. Bureau of Entomology but will during the coming spring and summer complete his survey of the birds of the Oneida Lake region for the Roosevelt Wild Life Experiment Station.

MARTINUS NIJHOFF, The Hague, announces the publication of 'L'Oiseau chez Lui,' a series of colored plates by Roger Reboussin with text by J. Rapine, published in parts of eight plates each, subscription to the first series of ten plates, 200 francs. A sample shows that the plates are from paintings in which the aim is to produce action and artistic effect, quite different from the detailed work which we are most familiar with in ornithological portraiture, but very effective.

CAPT. D. PRIEST, 'Mashumba,' P. O. Inoro, Marandellas, S. Rhodesia, announces that he is prepared to care for naturalists or sportsmen desiring to carry on exploration in Africa.

THE Water-fowl census to be taken by 3,000 volunteer observers under the direction of the Biological Survey is being looked forward to with

interest. It is planned that each observer select an area that can be covered in a single day and where a large number of birds may usually be found. This same area is to be covered year after year so that results will be strictly comparable, and the counts are to be made with the greatest care. The Survey is gratified by the wide response and satisfactory organization that has been effected.

In closing this, his seventeenth volume of 'The Auk,' the editor wishes to acknowledge the financial assistance generously given by certain members of the Union: to Dr. Thomas Barbour who made possible the colored plates of the new Cuban birds which appeared in the January issue and to Mr. S. Prentiss Baldwin who provided for the publication of the papers on the foot disease of Chipping Sparrows and the distribution of House Wrens, in the April issue; as well as the bird banding bibliography which appears as a supplement to this volume. To the Baird Ornithological Club we are indebted for the portrait and biography of Bradshaw H. Swales in the July number.

We trust that a large number of A. O. U. members have already made arrangements to attend the forty-sixth Stated Meeting of the Union at Charleston, beginning November 19 next. Attention is called to the fact that the titles of all papers to be presented at the meeting must be in the hands of the Secretary by November 1, with the time required for their delivery and a statement as to whether lantern or motion picture machine will be required for illustration. It is also important that the statement of time required shall be an actual trial, not a guess, as one almost invariably underestimates in such cases and thus delays the program.

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## ERRATUM.

In Volume XLIV (1927) the By Laws, to be bound at the end of the List of Members was paged incorrectly xi–xxiii, thus duplicating some pages of the contents.

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OF

# BIRD BANDING IN AMERICA

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By

FREDERICK C. LINCOLN

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# A BIBLIOGRAPHY OF BIRD-BANDING IN AMERICA.*

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(Contribution Number Fifteen of the Baldwin Bird Research Laboratory.)

## INTRODUCTION.

In the entire history of American ornithology there is probably no single subject that has shown such remarkable development as the method of study carried on through the medium of numbered bands.

Although the classical observation, made by Audubon about 1803 and described in the 'Ornithological Biography,' was published in 1834, the subject received no further mention by American ornithologists for sixty-five years. In 1899, appeared in 'The Osprey' a reprint of a paper by J. H. Gurney, Jr., in which was briefly discussed, the possibilities of obtaining specific data on the comparative ages of birds by marking them with paint or bands. These are the only known references to bird banding work prior to 1900.

The first known American paper that definitely advocated the development of a banding system as a means of studying migration and other subjects is the one written by Doctor Leon J. Cole, and published in the 'Third Report of the Michigan Academy of Science (1902).' This paper was reprinted the following year in the 'Bulletin of the Michigan Ornithological Club.'

American students are now probably familiar with the early history of the method on this continent, which may be said to extend to 1920. A brief recapitulation as shown by the literature may, however, be useful. The titles for this period number 33, the most productive years being 1910 with five and 1912 with four. Literature for other years has revealed either nothing at all, or but one, two or three papers or short notes.

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*This bibliography has been prepared at the request of Mr. S. Prentiss Baldwin and published in THE AUK by courtesy of Mr. Lincoln and Mr. Baldwin and through the generosity of the latter.

Beginning with 1920, following the publication of the epochal paper by Baldwin (1919), there has been a steady increase in the number of papers, which apparently reached a peak in 1925 and 1926 with 112 and 111 titles. The slight decrease in 1927 (104) is due to the discontinuance by the Western Bird Banding Association, of their department in 'The Condor,' and the substitution of a mimeographed quarterly "news letter." In conformity with accepted custom, this has not been considered as a publication.

It seems desirable at this point to direct attention to the changing character of the papers based upon this form of research. During the early years while the project was in course of development, the papers appearing in the ornithological journals and elsewhere, were devoted mainly to the experiences of station operators, descriptions of traps, notes on bait, and kindred subjects. This was natural in this formative period characterized by the lack of data that could be utilized in the preparation of reports that would constitute contributions to the knowledge of the habits of the different species. But within the past few years, with the rapid accumulation of thousands of records, both "repeats" and "returns," and other detailed studies based upon large numbers of individual living birds, the published papers have passed through a transition, so that many definite contributions to science are now in print.

In preparing this annotated list, the author does so in the belief that it will be generally useful to students of ornithology. The volumes of 'The Auk,' 'Bird-Lore,' 'The Condor,' and 'The Wilson Bulletin,' for the period 1920–1927, have been carefully examined, to which are added the notes and papers contained in the printed bulletins of the regional associations, publications of the United States Department of Agriculture, and many others. No attempt has been made to record the hundreds of newspaper articles, which are inaccessible and which are, moreover, usually based upon information published in other mediums. A point has been made to summarize every article so that the appended annotations would convey a definite idea regarding the character of the paper in question.

The arrangement is alphabetical throughout, titles being grouped chronologically under the name of the responsible author. It is

believed that this system will be more useful than a strict chronological treatment, although the latter method would graphically illustrate the growth of the project. To show this phase of the subject, a table is appended that lists by years, the authors contributing to the papers of that period. In this table numbers in parenthesis following the author's name, indicate the number of papers published during the year.

Tables of reference to important subjects also have been prepared which will be useful in looking up papers dealing with these features.

The list contains 513 titles, and represents all those at present known to the author. No claim is made for completeness but it is confidently believed that no important paper has been omitted. The work closes at the end of the calendar year 1927. An exception to this is the inclusion of the paper by Doctor E. W. Nelson published in the January (1928) number of the National Geographic Magazine. This paper so effectively sums up the activities of the preceding eight years, and is in effect a milestone in this method of investigation that it seems desirable to list it in the present record.

In conclusion the author desires to acknowledge the valued assistance of Doctor T. S. Palmer, of the Biological Survey, particularly in completing the names of authors; and also of S. Prentiss Baldwin, Director of the Baldwin Bird Research Laboratory, through whose interest, publication is made possible.

## BIBLIOGRAPHY

ALLEN, A[RTHUR] A[UGUSTUS].

1924. Returns of Ducks Banded at Ithaca. Bul. Eastern B. B. Assoc., no. 1, p. 3, October.

Lists returns from four species of ducks and also from *Pipistrelle* bats.

1927. Jenny Wren's Diary. Bird-Lore, vol. 29, pp. 290–301.

An interesting story, in diary style, in the "School Department." Based largely upon material obtained through banding.

ALLEN, A[RTHUR] F[RANCIS].

1920. A Banded Mallard. Wilson Bul., vol. 27, pp. 60–61.

Account of a Mallard raised at Marshfield, Mass., marked with band bearing inscription "No. 350, Marshfield," and which was shot 12 miles southeast of Norfolk, Va.

ALLEN, FRANCIS H[ENRY].

1925. Herring Gulls and Leach's Petrels. Bul. Northeastern B. B. Assoc., vol. 1, pp. 54–57.

Account of banding work with these birds at Matinicus and Seal Island, Maine.

ALLEN, GEORGE E.

1927. Concerning the Nesting and Trapping of the Barn Swallow. Bul. Northeastern B. B. Assoc., vol. 3, p. 74.

Note on taking this species at night by a net and a flashlight.

[ALLEN, JOEL ASAPH].

1904. Notes and News. Auk, vol. 21, p. 410.

Editorial note on the proposed plan of P. A. Taverner to band young birds; the bands to be inscribed "Notify the Auk, N. Y."

1911. Notes and News. Auk, vol. 28, pp. 522–523.

Refers to the placing of the American Bird Banding Association in the hands of the Linnaean Society of New York, and the American Museum of Natural History.

1912. Notes and News. Auk, vol. 29, pp. 571–572.

Editorial comment concerning banding activities in Europe. Mentions a Black-headed Gull (*Larus ridibundus*) banded at Rossitten, Germany, and killed near Bridgetown, Barbados, B. W. I.

AUDUBON, JOHN JAMES.

1834. Ornithological Biography, vol. 2, p. 126.

Account of the marking of fledgling Phoebes (*Sayornis phoebe*) with "silver thread," about 1803 and of the return of two of these birds to the same locality in the following season.

BAASCH, K. W.

1927. A Permanent Resident Song Sparrow. Bul. Northeastern B. B. Assoc., vol. 3, p. 19.

Note giving series of records for two banded Song Sparrows.

BALDWIN, S[AMUEL] PRENTISS.

1919. Bird-banding by Means of Systematic Trapping. Abstract of Proc. Linnaean Soc. of N. Y., no. 31, pp. 23–56, pls. 1–7.

Advocates the "systematic trapping" method, and reviews results obtained at Thomasville, Ga., and Cleveland, Ohio.

1921a. Recent Returns from Trapping and Banding Birds. Auk, vol. 38, pp. 228–237.

Report of operations at Thomasville, Ga., and Cleveland, Ohio, during 1919 and 1920.

1921b. The Marriage Relations of the House Wren (*Troglodytes a. aedon*). Auk, vol. 38, pp. 237–244.

The mating habits and genealogy of this species as learned from banded birds.

1922. Adventures in Bird-banding in 1921. Auk, vol. 39, pp. 210–224, illus.

Reviews results obtained in 1921 at Thomasville, Georgia, and Cleveland, Ohio.

1923a. What has Happened in New England. Wilson Bul., vol. 30, pp. 45–47.

Growth of bird banding in New England and the formation of the New England (=Northeastern) Bird Banding Association.

1923b. Bibliography of Bird Banding in America. Wilson Bul., vol. 30, pp. 237–240.

Lists 25 important papers on bird banding.

1924. Bird Banding—Are Birds Frightened or Injured. Wilson Bul., vol. 31, pp. 101–104. Reprinted in Indiana Aud. Bul., 1925, pp. 22–26.

Defines the enemies of birds at banding stations, and describes the attraction of a well regulated trapping station to the bird life of the region.

1925. Those House Wrens. Bird-Lore, vol. 27, pp. 234–237.

The House Wren is defended, and the plea entered that it is an injustice to condemn the species for what may be the acts of a few individuals.

BALDWIN, S[AMUEL] PRENTISS, AND S. CHARLES KENDEIGH.

1927. Attentiveness and Inattentiveness in the Nesting Behavior of the House Wren. Auk, vol. 44, pp. 206–216, illus.

A technical study of the nesting of the House Wren made in part with a thermocouple placed in the nest and connected with a potentiometer.

BALL, B. F.

1924. A Banded Evening Grosbeak. Bird-Lore, vol. 26, pp. 253–254.

One seen with a band at Oakville, Conn.

BARTSCH, PAUL.

1904. Notes on the Herons of the District of Columbia. Smithson. Misc. Coll., vol. 45, Quart. Issue, pp. 104–111.

Contains records of the recovery of Black-crowned Night Herons,

marked in the District, with bands inscribed: "Return to Smithsonian." The first scientific banding work done in America.

BOGGS, MARION A[LEXANDER].

1926. Marriage Relations of a Red-eyed Towhee. Auk, vol. 43, pp. 242–244.

Notes on habits of this species as observed at a trapping station, at Waynesville, North Carolina.

1927. Taming Birds by Handling. Bul. Eastern B. B. Assoc. no. 3, p. 11.

Finds that birds are retrapped more readily if not released immediately after banding, a little additional handling having a soothing effect.

BOULTON, RUDYERD.

1925. Report of the Executive Secretary. Bul. Eastern B. B. Assoc. no. 2, pp. 3–4.

1927. Ptilosis of the House Wren (*Troglodytes aedon aedon*). Auk, vol. 44, pp. 387–414, illus., bibliog.

A detailed study of the plumage, tracing its development (by tracts) from the first appearance of the feather sheaths on the nestling to the time the bird leaves the nest.

BOULTON, RUDYERD, and JOHN T[READWELL] NICHOLS.

1925. A Method of Analyzing Bird Banding Data. Bul. Eastern B. B. Assoc. no. 2, pp. 6–11.

Based upon mathematical computations, illustrated by graphs.

BOWDISH, B[EECHER] S[COVILLE].

1927. Banding Notes from Demarest, N. J. Bul. Eastern B. B. Assoc. no. 3, pp. 4–6, graph.

Lists many interesting repeat and return records of Song and Tree Sparrows.

BOWDISH, B[EECHER] S[COVILLE] AND R. H. HOWLAND

1925. Banded Song Sparrows in New Jersey. Bul. Eastern B. B. Assoc. no. 2, pp. 12–17, illus.

Discussion of records from two stations, aided by charts and a graph.

BRETSCH, CLARENCE.

1926a. The Harris Sparrow in Lake County, Indiana. Wilson Bul., vol. 33, p. 158.

Records capture at his trapping station of a specimen of this species, making the second or third record for the State. Released with band No. 189152.

1926b. Nesting of the Common Tern at Thousand Islands, Jefferson County, New York. Wilson Bul., vol. 33, pp. 200–201.

Deals mainly with habits of these birds, but mentions banding the only fledgling that could be found on August 2, 1926.

BROOKS, EARL.

1925. Bird Banding from January 1, 1924 to December 31, 1924. Indiana Aud. Bul., pp. 20–22.

Interesting account of the first year's activities at this station, located at Noblesville, Indiana.

BURTCH, VERDI.

1925. Notes from Branchport, N. Y. Bul. Eastern B. B. Assoc., no. 2, p. 20.

Repeat and return records for two Song Sparrows.

BUTTS, WILBUR K[INGSLEY].

1927. The Feeding Range of Certain Birds. Auk, vol. 44, pp. 329–350.

An important study made at Cornell University. The birds were banded and marked with colors to facilitate field identification of individuals.

CALDER, JAMES A[LEXANDER].

1926a. One Gambel Sparrow. Condor, vol. 28, p. 49.

Plumage note and results of experiment in releasing this bird at a station three-eighths of a mile from the one where it was trapped near Buena Park, California. Bird returned to the original station.

1926b. Say Phoebe Banded at Night. Condor, vol. 28, p. 50.

Captured by aid of a flashlight near Buena Park, California.

1926c. San Diego Red-wings Nesting in an Orange Grove. Condor, vol. 28, p. 240.

Some banding work done in a small colony of these birds.

CARTER, T[HOMAS] DONALD, AND R[ANDOLPH] H. HOWLAND.

1923. A Brewster's Warbler and his Brood. Auk, vol. 40, pp. 423–430.

Plumage notes on young *Vermivora leucobronchialis* × *Vermivora chrysoptera*, and description of trap used to take adults.

CARTH, MRS. JEAN E.

1925. Note on the Cowbird. Bul. Northeastern B. B. Assoc., vol. 1, pp. 50–51.

Male feeds female at trapping station.

CHAMBERLAIN, GLEN D.

1925. Notes on Measurements of Banded Birds. Bul. Northeastern B. B. Assoc., vol. 1, pp. 37–40.

Experiences at his stations at Brunswick and Easton, Maine, including trouble with red squirrels, tables of measurements, and temperatures.

CHAPIN, LUCY STOCK.

1926. Banding a Mockingbird. Bul. Northeastern B. B. Assoc., vol. 2, pp. 36–37.

Mockingbird wintering in South Windsor, Connecticut.

CHAPMAN, FRANK M[ICHLER].

1921. Instructions for Bird Banding. Bird-Lore, vol. 23, p. 211.

Review.

1924. Instructions for Banding Birds. Bird-Lore, vol. 26, p. 281.

Review.

1925a. Returns from Banded Birds, 1920 to 1923. Bird-Lore, vol. 27, p. 127.

Review.

1925b. Bulletin of the Eastern Bird Banding Association, No. 1, October, 1920. Bird-Lore, vol. 27, p. 127.

Review.

1927. Bulletin of the Northeastern Bird Banding Association, No. 2, April, 1927. Bird-Lore, vol. 29, p. 288.

Review. "Publications relating to bird-banding are usually so filled with facts that to abstract them adequately is almost equivalent to republishing them."

CHRISTOFFERSON, KARL.

1927. Munuskong State Park. Wilson Bul., vol. 34, pp. 242–243.

Short paper giving description of this park with comment on topography, fauna and flora. It also is a trapping station where during 1927, 278 birds of 35 species were banded; 168 of these were Song Sparrows.

CLEAVES, HOWARD H[ENDERSON].

1912. As to Bird Banding. Auk, vol. 29, pp. 280–281.

Refers to return of bird, No. 6302; describes obstacles in banding birds; announces that A. B. B. A. bands are being manufactured.

1913. What the American Bird Banding Association has Accomplished During 1912. Auk, vol. 30, pp. 248–261, illus.

General report of progress, giving history, present organization, methods of procedure, and such returns as have been received.

1914. What the American Bird Banding Association has Accomplished During 1912. Smithson. Inst., Annual Rept. for 1913, pp. 469–479.

Reprinted from the Auk, vol. 30, no. 2, April, 1913.

1920. Bird-Banding—A New Study. The Conservationist, vol. 3, pp. 83–86.

General article.

COLE, LEON J[ACOB].

1902. Suggestions for a Method of Studying the Migrations of Birds. 3rd Rept. Michigan Acad. Sci., pp. 67–70.

Discusses the problems of migration and suggests the use of bands, referring to the tags used by the "United States Fish Commission."

1903a. Suggestions for a Method of Studying the Migrations of Birds. Bul. Michigan Orn. Club, vol. 4, pp. 19–22.

Reprinted from 3rd Rept. Michigan Acad. Sci.

1903b. To the Editor of the Bulletin. Bul. Michigan Orn. Club, vol. 4, p. 93.

Letter referring to banding work in progress at Rossitten, Germany.

1909. The Tagging of Wild Birds as a Means of Studying Their Movements. Auk, vol. 26, pp. 137–143.

Gives account of first bird banding activities in America by Audubon, P. A. Taverner, and New Haven Bird Club.

1910a. Editorial. Wilson Bul., vol. 17, pp. 53–55.

Announcement of the organization of the American Bird Banding Association.

1910b. The Tagging of Wild Birds: Report of Progress in 1909. Auk, vol. 27, pp. 153–168.

Presents review of banding work in Europe and in America, with detailed account of activities in this country in 1909. The American Bird Banding Association was a direct result of this paper.

1922. The Early History of Bird Banding in America. Wilson Bul., vol. 29, pp. 108–114.

Historical sketch, tracing the banding method from Bartsch and Taverner down to date.

COMMONS, MARIE A[NDREWS], (MRS. FRANK WATKINS COMMONS).

1925a. Report of the Tanager Hill Bird Banding Station. Wilson Bul., vol. 32, pp. 48–51.

Interesting statement of banding work at this "thousand bird station" at Crystal Bay, Minnesota.

1925b. The Amenities of a Bird-Bander. Bird-Lore, vol. 27, pp. 387–391.

An interesting paper dealing with the transition of an observer into a bander. The station is described and comments follow concerning different birds taken. (This is now [1928] one of the largest banding stations in America, F. C. L.)

COOK, FLORIDA DAMRON.

1926. An Aquatic Hostelry. Field and Stream, vol. 31, pp. 22–23, and 63, illus.

Account of duck banding at Lake Merritt, Oakland, Calif., by E. H. Ehmann. Contains many errors.

COOKE, MAY T[HACHER].

1923. Bird Banders and the Bird Census. Wilson Bul., vol. 30, pp. 47–48.

Request for bird banding coöperators to assist in taking bird censuses.

CROSBY, MAUNSELL S[CHIEFFELIN].

1924. Bird Banding. Natural History, vol. 24, pp. 605–617, illus.

Interesting paper reviewing work in Europe and America, coupled with statement of new methods and some results.

1927. Report of the President (of the Eastern Bird Banding Association). Bul. Eastern B. B. Assoc., no. 3, p. 1.

CROSBY, MAUNSELL S[CHIEFFELIN] & J[OHN] T[READWELL] NICHOLS.

1927. Some Data from a Rhinebeck (N. Y.) Banding Station. Bul. Eastern B. B. Assoc., no. 3, pp. 7–11, graph.

Discussion of data obtained with reference to migration, chiefly of winter and transient species.

CROSS, ALBERT A[SHLEY].

1927a. Observations on Hawk Banding with Records and Recoveries. Bul. Northeastern B. B. Assoc., vol. 3, pp. 29–33.

Interesting account of banding birds of prey. Notes return records obtained.

1927b. Another Broad-winged Hawk Return. Bul. Northeastern B. B. Assoc., vol. 3, pp. 107–108.

Bird banded at Huntington, Mass., and recovered near Thornhurst, Pa.

CUMMINS, A. P.

1925. Banding Wilson Snipe. The Game Breeder, vol. 27, pp. 7–8, illus.

Birds banded at the Provincial Game Farm, Victoria, B. C.

DADISMAN, A[NDREW] J[ACKSON].

1925. Banded Song Sparrows in West Virginia. Bul. Eastern B. B. Assoc., no. 2, p. 23.

Note on repeats of birds banded from January to July (excepting May and June).

DALES, MARIE.

1925. Some Experiences in Bird Banding. Wilson Bul., vol. 32, pp. 177–179, illus.

Paper deals largely with habits and actions of birds taken at trapping station.

1926. A House Wren Study. Wilson Bul., vol. 33, pp. 14–16.

Evidence bearing on the destructiveness of certain individual Wrens.

1927. Some Returns from Bird Banding. Wilson Bul., vol. 34, pp. 113–115.

Interesting account of experiences in banding different species of birds. A few return records noted.

DALEY, FLORENCE K. (MRS. EDWIN WOOD DALEY).

1926. Rearing Young Red-breasted Nuthatches. Auk, vol. 43, pp. 528–531, illus.

A most interesting account.

DEANE, WALTER.

1925. Experiences in Banding Hummingbirds. Bul. Northeastern B. B. Assoc., vol. 1, pp. 67–68.

Baited with sweetened water and marked with No. 1 bands trimmed down as much as possible. Several captured.

DELURY, RALPH E[MERSON].

1924a. Some Experiences in Bird Banding. Canadian Field Nat., vol. 38, pp. 21–24, illus.

Report of activities at this station, near the Experimental Farm, Ottawa, Ont.

1924b. Association of Nuthatch and Downy Woodpecker. Return of a Young Robin. Bul. Eastern B. B. Assoc., no. 1, p. 3.

Repeat and return data for several species.

1925. Notes from Ottawa, Ont. Bul. Eastern B. B. Assoc., no. 2, p. 11.

Comment on Song Sparrows banded 1922-1924.

DUNHAM, ELIZABETH M[ARIE], (MRS. HORACE CLIFTON DUNHAM).

1926. Experiences in Banding Rose-breasted Grosbeaks. Bul. Northeastern B. B. Assoc., vol. 2, p. 88.

Seventeen trapped in 1926.

EMMONS, MRS. ARTHUR B. (LOUISE HICKOK EMMONS).

1925. Notes on Downy and Hairy Woodpeckers. Bul. Northeastern B. B. Assoc., vol. 1, pp. 32–33.

Twenty-one Downy and six Hairy Woodpeckers taken in one season.

EVERETT, CONSTANCE AND E[DWARD] A[DDISON].

1927. The Fun of Banding Chimney Swifts. Wilson Bul., vol. 34, pp. 111–112.

Interesting account of the banding of these birds at Waseca, Minn., describing trap used and reactions of the birds.

EVERETT, E[DWARD] A[DDISON].

1927. How did the Bird Find its Way Back? Wilson Bul., vol. 34, pp. 245–246.

Cowbird released two miles away from trapping station returns promptly. An interesting case.

FISHER, A[LBERT] K[ENRICK].

1914. Recovery of a Banded Pintail Duck. Auk, vol. 31, p. 100.

A Pintail with band marked 186A, recovered at Cubit's Gap, near the mouth of the Mississippi River.

FLETCHER, L[AURENCE] B[ROWN].

1923. [Account of the Annual Meeting of the New England (= Northeastern) B. B. Assoc., January 17, 1923 in Boston.] Auk, vol. 40, pp. 379–380.

1925a. A Cowbird's Maternal Instinct. Bul. Northeastern B. B. Assoc., vol. 1, pp. 22–24.

Female Cowbird feeds young of the same species.

1925b. Recent Song Sparrow Returns. Bul. Northeastern B. B. Assoc., vol. 1, pp. 31–32.

Several individuals returning to the point of banding at Cohasset, Massachusetts.

1926a. Apparently Unusual Returns of Chipping Sparrows. Bul. Northeastern B. B. Assoc., vol. 2, pp. 17–18.

Of a series of birds banded in the autumn, some were recaptured in the fall, while others returned in the spring.

1926b. A Junco Return. Bul. Northeastern B. B. Assoc., vol. 2, p. 39.

Banded in 1923, retaken in 1924, 1925, and 1926.

1926c. An Example of the Tree Swallow's Marital Relations. Bul. Northeastern B. B. Assoc., vol. 2, p. 56.

Pair banded in 1925, return in 1926 and select different mates.

1926d. A Return Red-winged Blackbird. Bul. Northeastern B. B. Assoc., vol. 2, p. 57.

Banded in 1924, retaken in 1926.

FLETCHER, L[AURENCE] B[ROWN], AND CHA[RLE]S L[IVY] WHITTLE.

1924. Further Observations on the Group Habit Among Birds. Auk, vol. 41, pp. 327–333.

Detailed statement based on data from four adjoining stations.

FLOYD, CHARLES B[ENTON].

1925. Six Days in a Massachusetts Tern Colony. Bul. Northeastern B. B. Assoc., vol. 1, pp. 58–60.

Interesting account of conditions at "Tern Island" near Chatham, Mass., where 2,500 Common Terns, 217 Roseate Terns, and 9 Piping Plovers were banded.

1926a. The Fourth Banding Expedition to the Sandy Neck Black-crowned Night Heron Colony. Bul. Northeastern B. B. Assoc., vol. 2, pp. 3–6.

1,500 young birds banded. Paper deals with procedure followed, and includes a few return records.

1926b. Bronzed Grackle Recoveries. Bul. Northeastern B. B. Assoc., vol. 2, p. 13.

Refers to records in U. S. Dept. Agr. Bul. 1268, and lists three others from his station.

1926c. Additional Experiences in Banding Terns at Tern Island, Chatham, Mass. Bul. Northeastern B. B. Assoc., vol. 2, pp. 68–72.

Paper giving account of banding work at this point in 1926, with many observations on both adults and young.

1927a. Notes on the Development of Young Common and Roseate Terns. Bul. Northeastern B. B. Assoc., vol. 3, pp. 95–101.

Important paper, giving daily notes on plumage development and weights.

1927b. Recent Common Tern Recoveries. Bul. Northeastern B. B. Assoc., vol. 3, p. 108.

Lists four birds, banded at Tern Island, Chatham, Mass., recovered from Trinidad, B. W. I.

FORBUSH, EDWARD HOWE.

1922. Report of Edward Howe Forbush, Field Agent for New England. Bird-Lore, vol. 24, p. 404.

A bird bander is necessarily a bird-protectionist as he must guard his traps and nests from natural enemies. The banding work should accordingly be encouraged by the Audubon Association.

1927. Some Problems for the Bird Bander. Bul. Northeastern B. B. Assoc., vol. 3, pp. 33–35.

Twenty-seven problems suggested.

GAIN, L[OUIS].

1912. The Penguins of the Antarctic Regions. Smithsonian Rept., p. 478.

Several banded with celluloid rings of various colors. The writer concludes that these birds do not mate until two years old.

GANIER, ALBERT F[RANKLIN].

1921a. Notes—Here and There. Wilson Bul., vol. 28, p. 108.

Banding work of W. I. Lyon, at Waukegan, Ill.

1921b. Notes—Here and There. Wilson Bul., vol. 28, p. 157.

Desirability of a campaign of winter trapping and banding, particularly from southern localities.

GAULT, BENJ[AMIN] T[RUE].

1910. The Tagging of Nesting Birds. Auk, vol. 27, p. 92.

Describes the fate of a young Martin whose band became caught on some of the nesting material and caused the bird's death.

GILL, GEOFFREY.

1925. Old and Young Song Sparrows. Bul. Eastern B. B. Assoc., no. 2, p. 11.

Returned bird nested in the vicinity of the trapping station.

GILLESPIE, JOHN A[RTHUR].

1924a. The Rewards of Bird Banding. Bird-Lore, vol. 26, pp. 236–240.

Popular paper containing many interesting incidents noted at his trapping station at Glenolden, Pennsylvania.

1924b. New Jersey Common Tern Migrates to Mexico. Bul. Eastern B. B. Assoc., no. 1, p. 5.

Tern banded August 5, 1923 at Anglesea, N. J., captured at Campo del Carmen, Campeche, Mexico, January, 1924.

1927a. Returns from the White-throated Sparrow. Bul. Eastern B. B. Assoc., no. 3, pp. 6–7.

Discussion of two series of return records, "migrant returns" and "winter resident returns."

1927b. Four and Five Year Old Catbird and Crested Flycatcher, and Probably Resident Song Sparrow. Bul. Eastern B. B. Assoc., no. 3, p. 13.

GILLESPIE, MABEL BROWN.

1924. Glenolden Notes. Bird-Lore, vol. 26, p. 327.

Two Carolina Wrens and a Winter Wren, are banded.

1925. How we Combine Science and Pleasure. Mt. Holyoke Alumnae Quart., vol. 9, pp. 57–59.

A paper explaining the purposes of banding, methods of operation and some information obtained by the writer and her husband.

1927a. Chewink Notes from Marthas Vineyard. Bul. Northeastern B. B. Assoc., vol. 3, p. 18.

One return; great preponderance of males over females noted in 1926.

1927b. Returns of a Crested Flycatcher. Bul. Northeastern B. B. Assoc., vol. 3, pp. 52–54.

Two (probably three) definite returns for a male bird that each time returned with a different mate.

GILLESPIE, MR. AND MRS. J[OHN] A[RTHUR].

1925. Report of Banded Song Sparrows. Bul. Eastern B. B. Assoc., no. 2, pp. 4–6.

Analysis of data obtained at Glenolden, Pa., and Oak Bluffs, Mass.

GLADDEN, GEORGE.

1923. The Bird-Banding Movement. Review of Reviews, May, pp. 493–496.

History and results of banding; quotes Mr. Baldwin and lists a

few of Mr. H. S. Osler's duck returns. Paper based entirely on published sources.

GRANT, E. O.

1926a. Banding Redpolls at Patten, Maine. Bul. Northeastern B. B. Assoc., vol. 2, pp. 51–52.

175 banded; a few Greater Redpolls noted.

1926b. Banding Chimney Swifts at Patten, Maine. Bul. Northeastern B. B. Assoc., vol. 2, pp. 84–85.

660 banded; description of trap used and reactions of birds.

1926c. Notes on Tree Swallows and a Probable New Bird Parasite. Bul. Northeastern B. B. Assoc., vol. 2, p. 86.

Banded occupants of seven boxes. One blood-sucking fly larva obtained.

[GRINNELL, JOSEPH].

1910. Editorial Notes and News. Condor, vol. 12, p. 135.

Short note on organization of the American Bird Banding Association.

1920. Editorial Notes and News. Condor, vol. 22, p. 113.

Account of the bird banding work taken over by the Biological Survey.

1921. Editorial Notes and News. Condor, vol. 23, p. 197.

Note calling attention to J. E. Law's article on a preceding page requesting banding data for 'The Condor.'

1922. Editorial Notes and News. Condor, vol. 24, p. 69.

Short account of the organization of the New England Bird Banding Association.

1923. Editorial Notes and News. Condor, vol. 25, p. 143.

Short note announcing the beginning of new department, "With the Bird Banders," under the management of J. Eugene Law.

GRINNELL, JOSEPH.

1925. Bird Netting as a Method in Ornithology. Condor, vol. 42, pp. 245–251.

Important paper setting forth the possibilities of taking small birds in large numbers through the use of nets such as are illegally used by aliens.

GROMME, OWEN J.

1927. Capturing Shorebirds by the Aid of a Flashlight. Yearbook, Public Museum, Milwaukee, Wis., 1926, vol. 6, pp. 64–66, illus. (Sept. 1, 1927).

Experiments showed that this method might be employed to

advantage as in less than an hour 11 Sanderlings, 5 Least Sandpipers, 1 Pectoral Sandpiper, and 1 Semipalmated Plover, were captured, while many others were lost through faulty equipment.

GROSS, ALFRED O[TTO].

1923. The Black-crowned Night Heron (Nycticorax nycticorax naevius) of Sandy Neck. Auk, vol. 40, pp. 1–30, and pp. 191–214.

A detailed life history article containing banding records on pp. 9–10.

1925. Suggested Ornithological Work for Bird Banders. Auk, vol. 42, pp. 95–104.

Several problems discussed, which should receive attention at banding stations.

1926. A Nighthawk Study. Bul. Northeastern B. B. Assoc., vol. 2, pp. 41–44.

Banded female Nighthawk returns four successive years at Brunswick, Maine.

GURNEY, J[OHN] H[ENRY] (JR.).

1899. On the Comparative Ages to Which Birds Live. Osprey, vol. 3, pp. 145–155.

Paper reprinted from 'The Ibis,' for January 1899. On page 147, the writer briefly discusses "marking birds" by means of bands and paint.

HAMILL, MRS. L[AFAYETTE] C.

1926. Notes on the Mating of Song Sparrows and Their Range Limits During the Nesting Period. Bul. Northeastern B. B. Assoc., vol. 2, pp. 7–10, diagram.

Two year records for two pairs of birds are discussed.

HARDING, KATHERINE C[LARK] (MRS. RICHARD BRUCE HARDING).

1925. Semi-colonization of Veeries. Bul. Northeastern B. B. Assoc., vol. 1, pp. 4–7.

Sixteen young banded.

1926a. Tree Sparrow Returns. Bul. Northeastern B. B. Assoc., vol. 2, p. 16.

Of seven banded in 1924 at Cohasset, Massachusetts, three returned in 1925.

1926b. A Pair of Red-breasted Nuthatches. Bul. Northeastern B. B. Assoc., vol. 2, p. 16.

Two banded birds usually together, are believed mated.

1926c. Home Life of the Black-throated Blue Warbler. Bul. Northeastern B. B. Assoc., vol. 2, pp. 65–68, illus.

By using nestlings as decoys both adults were caught in a Chardonneret trap.

1927a. White-throated Sparrow No. 37603. Bul. Northeastern B. B. Assoc., vol. 3, p. 21.

Banded November 11, 1923, returned in January 1925, 1926, and 1927.

1927b. A Partial Record of the Nesting of the Kingfisher. Bul. Northeastern B. B. Assoc., vol. 3, pp. 69–70.

Notes on the development of a brood of banded Kingfishers.

1927c. A Black-throated Blue Warbler Return near Lake Asquam, New Hampshire. Bul. Northeastern B. B. Assoc., vol. 3, pp. 74–75.

Another interesting note giving a return for this species, and an account of additional banding by means of young birds caught in a Chardonneret trap.

HARDING, RICHARD B[RUCE].

1925a. A Modified Chardonneret Trap. Bul. Northeastern B. B. Assoc., vol. 1, pp. 35–37, drawing.

Use of this trap for Warblers by adding the "agitated water bait."

1925b. Tree Traps. Bul. Northeastern B. B. Assoc., vol. 1, pp. 60–62, drawings.

Describes series of traps suitable for use on tree trunks.

1927. A Chestnut-sided Warbler Return. Bul. Northeastern B. B. Assoc., vol. 3, pp. 108–109.

Young bird banded in 1926 at Holderness, New Hampshire, retaken as breeding bird in 1927.

HARDING, MR. AND MRS. RICHARD B[RUCE].

1926a. White-throats in Cohasset, Mass. Bul. Northeastern B. B. Assoc., vol. 2, p. 37.

Note bearing on group habit of this species.

1926b. Juncos with Diseased Feet. Bul. Northeastern B. B. Assoc., vol. 2, pp. 39–40.

Four out of ten or fifteen found in a diseased condition, probably bird pox. Condition of each bird described.

HARRINGTON, ALICE B[OWERS].

1923. Some Notes from the Records of the New England Bird Banding Association. Auk, vol. 40, pp. 186–189.

Records received for between 4,000 and 5,000 birds, during 1922. Details of the work of members and a few outstanding returns.

1925. Record of Bird-Banding During 1924. Bul. Northeastern B. B. Assoc., vol. 1, p. 24.

During the year, members banded 12,463 birds and 763 returns were reported.

1926. Report of the Recording Secretary of the Northeastern Bird Banding Association January 15, 1926. Bul. Northeastern B. B. Assoc., vol. 2, pp. 32–33.

Members banded 11,750 birds of 112 species during the year; 533 returns received for 32 species.

1927. Report of the Recording Secretary of the Northeastern Bird Banding Association. Bul. Northeastern B. B. Assoc., vol. 3, p. 11.

14,055 birds, of 114 species, banded during the year. Returns number 533.

HASTINGS, WALTER E[RNEST].

1924. Five Hundred Common Terns Banded. Wilson Bul., vol. 31, p. 41.

Banded at Lone Tree Island, Saginaw Bay, Mich. Commercial fishermen accuse these birds of doing much damage which the writer believes is unjustified.

HEMPEL, KATHLEEN M. (MISS).

1921. Getting Acquainted with the Birds. Everygirl's Magazine, vol. 9, pp. 64–65.

Account of banding station at Elkader, Iowa, and the actions of birds studied, supplemented with a general and historical account of bird banding.

1925. Adventures in Bird Banding. Wilson Bul., vol. 32, pp. 95–98.

Four-year account of work done at her station at Elkader, Iowa, with comments concerning the different species.

HERRICK, HAROLD.

1916. A Banded Canada Goose. Auk, vol. 33, p. 198.

Note on a Canada Goose shot at Pine Island Club, North Carolina, banded on both legs with numbers 312 and 314.

HIGBEE, HARRY GEORGE.

1923. Our Winter Birds at the Sharon Sanctuary. Bul. Massachusetts Aud. Soc., vol. 7, pp. 3–6.

Account of banding work at the Moose Hill Bird Sanctuary, Sharon, Massachusetts, with a list of returns.

HIGGINS, A[NDREW] W[HITMAN].

1925a. Bluebird Behavior at Highland View Farm. Bul. Northeastern B. B. Assoc., vol. 1, pp. 2–4.

Data showing close organization of two broods with their parents, at Rock, Massachusetts.

1925b. The Purple Finch's Nuptial Dance. Bul. Northeastern B. B. Assoc., vol. 1, p. 10.

Short description of the "dance" of a banded Purple Finch at Rock, Mass.

1926a. An Apparently Migrating Group of Juncos. Bul. Northeastern B. B. Assoc., vol. 2, pp. 31–32.

Argument that two groups of Juncos trapped in January 1925 and 1926 at Rock, Massachusetts were in migration.

1926b. Nesting Records of Song Sparrows 25935 and 39235. Bul. Northeastern B. B. Assoc., vol. 2, p. 39.

A pair of these birds evidently remained mated for three seasons, at Rock, Massachusetts.

1926c. Notes on Baiting Myrtle Warblers. Bul. Northeastern B. B. Assoc., vol. 2, p. 58.

Successfully taken with bayberries as bait, at Rock, Massachusetts.

1926d. Notes on the Nesting of the Phoebe. Bul. Northeastern B. B. Assoc., vol. 2, pp. 81–82.

A pair of Phoebes return, remate and build a nest on exact site of that of the year before.

1926e. The Barred Owls at Rock. Bul. Northeastern B. B. Assoc., vol. 2, pp. 89–90.

A brood of two nestlings banded.

1927a. Some 1927 Returns at Rock, Massachusetts, and the Information They Convey. Bul. Northeastern B. B. Assoc., vol. 3, pp. 60–61.

Discusses a few returns for Song Sparrows, Purple Finches, and Phoebes.

1927b. Barred Owl Recovery. Bul. Northeastern B. B. Assoc., vol. 3, p. 109.

Bird retaken five miles from point of banding.

HOBART, MARY FORRESTER.

1923. Canary-cage Bird Banding. Bul. Massachusetts Aud. Soc., vol. 7, p. 14.

Short account of experience in using the canary-cage trap.

HOFFMAN, E[DWARD] C.

1925. Blue Jay Notes. Wilson Bul., vol. 32, p. 101.

Notes on the actions of banded Jays in the vicinity of a trapping station, at Lakewood, Ohio.

1926. Winter Notes on Blue Jays. Wilson Bul., vol. 33, pp. 44–45.

The Jays successfully maintained a preserve of their own in the trees close to the traps, at Lakewood, Ohio.

1927. English Sparrow Control. Bul. Northeastern B. B. Assoc., vol. 3, pp. 87–89, graph.

The percentage of immature birds destroyed is far above that of the adults. Cites evidence to show adaptation to changed conditions of food supply.

HOFFMAN, PAUL W[ILLIAM].

1927. Home Life of the Black Tern in Wisconsin. Wilson Bul., vol. 34, pp. 78–80.

An interesting paper relating to actions of adults and young. Some of the latter were banded.

HORSEY, R[ICHARD] E[DGAR].

1924a. Behavior of Black-capped Chickadees during the Winter of 1923–1924. Auk, vol. 41, pp. 616–617.

Two groups of Chickadees at Rochester, New York, repeated regularly at the stations where originally banded, but did not go from one to the other, although the stations were only 835 feet apart.

1924b. Wintering Tree Sparrows and Juncos (at Rochester, New York). Bul. Eastern B. B. Assoc., no. 1, p. 5.

Both species noted at the station all winter.

1925a. Return Records of Native Wild Birds. Bul. Northeastern B. B. Assoc., vol. 1, pp. 51–52.

Details of returns for several birds.

1925b. Rochester, N. Y., Records. Bul. Eastern B. B. Assoc., no. 2, p. 21.

Brief discussion of Song Sparrow returns and mention of other data.

1926a. Tree Sparrow Migration: A Comparison. Bul. Northeastern B. B. Assoc., vol. 2, pp. 44–48.

Compares banding data from stations at Rochester, N. Y., and Wells River, Vermont.

1926b. Bird Banding Stations at Rochester, N. Y. Bul. Northeastern B. B. Assoc., vol. 2, pp. 55–56.

Description of trapping station.

1927a. Cowbird History. Bul. Northeastern B. B. Assoc., vol. 3, p. 46.

Deductions from a return record; banded at Rochester, New York, June 29, 1923; recaptured June 8, 1924, and April 25, 1925.

1927b. Trap Shy Grackles. Bul. Eastern B. B. Assoc., no. 3, p. 12.

Grackles do not repeat and are difficult to trap. Six station and two "foreign" returns mentioned.

HOWLAND, R[ANDOLPH] H.

1924. Late Summer Robins. Bul. Eastern B. B. Assoc., no. 1, p. 3.

Information regarding the increase of Robins in the late summer, at Upper Montclair, New Jersey, based on number handled at trapping station. From 1920 to 1922, 21 were banded; 1923 to October 6, 1924, 289 were banded.

HOWLAND, R[ANDOLPH] H., AND B[EECHER] S[COVILLE] BOWDISH.

1925. Banded Song Sparrows in New Jersey. Bul. Eastern B. B. Assoc., no. 2, pp. 12–17, charts. (See Bowdish, B. S.)

HOWLAND, R[ANDOLPH] H., AND T[HOMAS] DONALD CARTER.

1923. A Brewster's Warbler and His Brood. Auk, vol. 40, pp. 423–430. (See Carter, T. Donald.)

H[OWLAND], R[ANDOLPH] H. & J. T. N. [=JOHN TREADWELL NICHOLS].

1925. Summary. Bul. Eastern B. B. Assoc., no. 2, p. 23.

Mention of Song Sparrow records from several stations.

HUBBARD, MARY E[LWELL] F[ULLER] (MRS. FRANK D. HUBBARD).

1926. Notes at a Connecticut Banding Station. Bul. Northeastern B. B. Assoc., vol. 2, pp. 15–16.

Enumerates numbers of each species banded, repeats and returns.

1927a. White-throated Sparrow Returns. Bul. Northeastern B. B. Assoc., vol. 3, pp. 9–10.

Brief discussion of eight returns for this species at New Haven, Connecticut.

1927b. A White-throated Sparrow Banded in Connecticut Reported from North Carolina. Bul. Northeastern B. B. Assoc., vol. 3, p. 48.

1927c. Banding Parula and Cape May Warblers. Bul. Northeastern B. B. Assoc., vol. 3, pp. 72–73.

Captured in "pull-string, open-top trap with water drip," at New Haven, Connecticut.

HUFF, N[ED] L.

1927. Some Banding Results in Minnesota. Wilson Bul., vol. 34, pp. 244–245.

Description of trapping station, enumeration of numerical status of species banded, and tabulation of returns.

HURD, FRANCES A[MELIA].

1923. Bird Banding at Birdcraft. Bul. Massachusetts Aud. Soc., vol. 7, p. 6.

Lists 3 returns from birds banded at Birdcraft Sanctuary at Fairfield, Conn.

JENSEN, J[ENS] K[NUDSEN].

1927. Bird Banding Notes from New Mexico. Bul. Northeastern B. B. Assoc., vol. 3, pp. 8–9.

971 Juncos, of five species and subspecies, have been banded. Notes on "repeats" and "returns" recorded.

JOHNSON, CHARLES W[ILLISON].

1925. Insects that Infest Birds. Bul. Northeastern B. B. Assoc., vol. 1, pp. 51–53.

Important paper dealing with parasitic insects sent to the writer by operators of banding stations.

[JONES, LYNDS].

1910. Editorial. Wilson Bul., vol. 17, pp. 53–55.

Organization of the American Bird Banding Association.

1912. Editorial. Wilson Bul., vol. 19, p. 194.

Report of the Secretary of the American Bird Banding Association, presented at the Cambridge meeting of the A. O. U. Contains an appeal for more banders.

1921a. Editorial. Wilson Bul., vol. 28, p. 193.

Refers to Baldwin's success in trapping for banding purposes, and states that bands are issued and records kept by the Biological Survey.

1921b. Bird Banding by Means of Systematic Trapping, Review of. Wilson Bul., vol. 28, pp. 203–204.

Review of Baldwin's paper of this title.

1922a. Editorial. Wilson Bul., vol. 29, p. 37.

Notice concerning the Department of Bird Banding, begun in this issue.

1922b. Editorial. Wilson Bul., vol. 29, p. 225.

The belief that birds are "rather narrowly limited" in their winter ranges can be determined only by banding operations.

1924. Editorial. Wilson Bul.., vol. 31, p. 93.

The bird banding work seems to be the most active form of study at the present time.

KENDEIGH, S[AMUEL] CHARLES.

1927. See Baldwin, S. Prentiss, 1927.

KENISTON, ALLAN.

1926. Chewink Returns. Bul. Northeastern B. B. Assoc., vol. 2, p. 87.

Station returns for these birds at Vineyard Haven, Massachusetts, equal 27.40 per cent.

1927a. Trapping and Banding Owls During Their Migration. Bul. Northeastern B. B. Assoc., vol. 3, pp. 39–42, illus.

Several Long-eared, Screech, and Snowy Owls caught at Vineyard Haven, Mass., in pole traps, the traps being fixed so that the legs of captured birds were not injured.

1927b. Chewink Return Records at Marthas Vineyard During 1927. Bul. Northeastern B. B. Assoc., vol. 3, pp. 93–95.

Fifteen returns obtained, eleven being males. Three (two males and one female) were banded in 1923.

1927c. Gull-Banding at Muskeget Island [Massachusetts]. Bul. Northeastern B. B. Assoc., vol. 3, pp. 105–107, illus.

About one hundred each of Herring and Laughing Gulls, were banded.

KNOX, SADIE B.

1927. Tree Sparrow History at Westfield, Massachusetts. Bul. Northeastern B. B. Assoc., vol. 3, pp. 37–39.

Eleven out of thirteen banded birds were retaken in the following season.

KUNTZ, PAUL.

1925. Banding of the Baltimore Orioles. Canadian Field Nat., vol. 39, pp. 113–114.

LANG, GEORGE.

1927. Marauding Crows and Magpies. Wilson Bul., vol. 34, p. 243.

These birds destroyed eggs and young in colonies of Black-crowned Night Herons, and Common Terns at Indian Head, Saskatchewan.

LASHLEY, K[ARL] S[PENCER].

1915. See Watson, J. B.

LAW, J[OHN] EUGENE.

1921. Bird Banding. Condor, vol. 23, p. 196.

An announcement that 'The Condor' will publish records of birds banded in the Pacific Coast States.

1922. Records of Birds Banded. Condor, vol. 24, p. 35.

Banding records for several birds.

1923a. Record of Birds Banded. Condor, vol. 25, p. 33.

Banding records for several birds.

1923b. Banded Birds: A Graphic Form of Record for Repeats. Condor, vol. 25, pp. 119–120.

Short paper, illustrated with 2 diagrams, showing an original method of keeping record of repeats of banded birds.

1923c. With the Bird Banders. Condor, vol. 25, July, pp. 140–142.

A new department is here started. Subtitles are: Foreword; Merits and Demerits; Band all Nestlings; Banded Birds Killed; A Banded White-throated Sparrow Returns; Records of Banded Birds.

1923d. With the Bird Banders. Condor, vol. 25, pp. 177–179.

Subtitles are: What is a Bird Bander?; Simple Bird Traps (first figure of Potter Trap); Gulls; Shall We Have Snakes or Birds?

1924a. With the Bird Banders. Condor, vol. 26, pp. 155–157.

In this issue, the subtitles are: Annual Census; Warning; Subspecific Names; Banding Nestlings; Los Angeles Chapter.

1924b. With the Bird Banders. Condor, vol. 26, pp. 197–199.

Subtitles are: White-throated Sparrow Banded on Stanford Campus (by Ernest H. Quayle); A Third White-throated Sparrow Banded (by Elbert Benjamine); A Correction; Gambel Sparrow; Western Trap; Potter Trap; Vest Pocket Trap; Depauperizing; Breeding Colonies.

1924c. With the Bird Banders. Condor, vol. 26, pp. 231–234.

Subtitles are: Zonotrichia on Vancouver Island (by G. D. Sprot); Banding a Means, Not an End; Clover Leaf Trap; Symposiums; Thurber Juncos Banded in the San Bernardino Mountains.

1925a. With the Bird Banders. Condor, vol. 27, pp. 38–42.

Subtitles are: Nuthatch in Pasadena Develops Trap Habit (illus.) The Sprot Trap; Returns at Stations in Southern California; The First Government Report on Returns from Banded Birds.

1925b. With the Bird Banders. Condor, vol. 27, pp. 78–82.

Subtitles are: The Western Bird Banding Association; New Banding Publications; Among the Banding Stations; Emergency Supply of Bands; Symposiums; Analyses of Banding Records (charts).

1925c. With the Bird Banders. Condor, vol. 27, pp. 118–123.

Subtitles are: A Banding Outfit and Some Traps (by G. D. Sprot); Return of Banded Birds Removed to a Distance (by Wright M. Pierce); Remarkable Localization; The Pattern of Feathers; Molt (illus.).

1925d. With the Bird Banders. Condor, vol. 27, pp. 238–240.

Subtitles are: Pith and Pathos; and Western Bird Banding Association. The former deals at some length with alleged dangers to birds from trapping methods.

1926a. With the Bird Banders. Condor, vol. 28, pp. 49–51.

Subtitles are: One Gambel Sparrow (by James A. Calder); A Warbler Trap, illus. (by Harold Michener); Say Phoebe Banded at Night (by James A. Calder); Mystery Band Number 3: Season 1925 (by Frederick C. Lincoln); Register All the Bands You Receive; and How Soundly Do Birds Sleep?

1926b. Injured Juncos Quickly Recover. Condor, vol. 28, pp. 129–130.

Two birds fly violently against a window pane, and are rendered unconscious, but soon recover and fly away.

1926c. Green-tailed Towhee Qualifies in Intelligence Test. Condor, vol. 28, pp. 133–134.

Interesting account of a banded bird that seemingly obtained all its food at a station located in the San Bernardino Mountains, California.

1926d. Juvenal House Wren Reveals Ancestral Trait not Apparent in Adults. Condor, vol. 28, pp. 178–179.

A banded bird is repeatedly observed to "bob" its body in the manner of *Salpinctes* and *Catherpes*.

LEWIS, HARRISON F[LINT].

1922. Editorial Note. Canadian Field Nat., vol. 36, p. 79.

Short review of note in 'The Auk,' vol. 38, 1921, p. 453, by F. C. Lincoln on the American Common Tern recovered in Africa.

1923. Review. Canadian Field Nat., vol. 37, p. 57.

Trapping Ducks for Banding Purposes, with an Account of the Results from one Waterfowl Station. By Frederick C. Lincoln, Auk, vol. 39, pp. 322-334, with 4 plates.

1925a. Quebec (Saguenay County) Records. Bul. Northeastern B. B. Assoc., vol. 1, pp. 71–72.

Table listing 17 returns for six species.

1925b. Bird Banding in Townsend's Labrador. Canadian Field Nat., vol. 39, pp. 198–200.

1926. The Banding of Common Murres. Bul. Northeastern B. B. Assoc., vol. 2, pp. 1–3.

Account of banding these birds at St. Mary's Islands, Quebec.

LINCOLN, FREDERICK C[HARLES].

1921a. The History and Purposes of Bird Banding. Auk, vol. 38, pp. 217–228.

Historical sketch of banding work in Europe and America, with outline of problems on which banding data may bear.

1921b. Instructions for Bird Banding. U. S. Dept. of Agr. Dept. Circ., no. 170, pp. 1–19, illus.

1921c. American Common Tern Recovered in West Africa. Auk, vol. 38, pp. 453–454.

Record of a Tern banded by J. C. Phillips at Eastern Egg Rock, Muscongus Bay, Me., July 3, 1913, and found dead at the mouth of the Niger River, 4 years later.

1922a. Knowledge Gained from Banding Migratory Waterfowl. Bul. Amer. Game Prot. Assoc., vol. 11, pp. 12–13, illus.

1922b. Trapping Ducks for Banding Purposes. Auk, vol. 39, July, pp. 322–334, illus.

Descriptions of several duck traps and discussion of returns received from birds banded at Lake Scugog, Ontario.

1922c. Hans Christian Cornelius Mortensen. Auk, vol. 39, p. 592.

Obituary notice, with comment on his banding work.

1922d. The Capture of Waterfowl in Fish Nets. Condor, vol. 24, p. 211.

"Fyke" nets successfully used for the capture of Ducks.

1924a. Banding Gulls in Lake Michigan. Wilson Bul., vol. 31, pp. 38–41.

Account of banding work done on Beaver Islands, in 1922 and 1923.

1924b. Instructions for Banding Birds. U. S. Dept. of Agr. Misc. Circ. no. 18, pp. 1–28, illus.

Revision of Dept. Cir. 170, Instructions for Bird Banding. Descriptions of traps, banding methods, etc.

1924c. Banding Notes on the Migration of the Pintail. Condor, vol. 26, pp. 88–90.

Account of migration routes of the Pintail as shown by banding data.

1924d. Returns from Banded Birds, 1920 to 1923. U. S. Dept. of Agr. Bul. no. 1268, pp. 1–56, illus.

Lists in tabular form all returns from banded birds up to July 1, 1923.

1925a. Some Results of Bird Banding in Europe. Auk, vol. 42, pp. 358–388, illus.

Reviews in detail, the data obtained from all agencies for the White Stork, Great Gray Heron, European Teal, Pintail, Black-headed Gull, Lesser Black-backed Gull, Starling, and Swallow, with notes on other species.

1925b. Mystery Bands. Wilson Bul., vol. 32, pp. 100–101.

A Bronzed Grackle trapped at Mont Belvieu, Texas, on March 31, 1925, carried an aluminum band with the number "37".

1925c. Mystery Bands Numbers 1 and 2—Season 1925. Wilson Bul., vol. 32, pp. 232–233.

A Duck with a band marked B3776 NURP was shot at Quill Lake, Saskatchewan, and a Blue-winged Teal with a band marked (20) AM-6827 was killed at Fox Lake, Illinois.

1926a. Mystery Band Number 3: Season 1925. Condor, vol. 28, pp. 50–51.

A Mallard carrying a band numbered 136 was killed in Stanislaus County, California.

1926b. Trapping Ducks for Banding. U. S. Dept. Agri. Circ. 362, pp. 1–20, illus.

Descriptions of traps used for this purpose.

1926c. Bird Banding in Progress and Prospect. Auk, vol. 43, pp. 153–161.

Reviews work in progress with several species and discusses ways and means for applying the banding method to other species.

1926d. The Migration of the Cackling Goose. Condor, vol. 28, pp. 153–157, illus.

Geese banded in the vicinity of Hooper Bay, Alaska, apparently flew southward along the coast to the mouth of the Columbia River, there turning inland and again southward to winter quarters at Tule Lake and Sacramento Valley, California.

1926e. Banding Gulls and Terns in Lake Michigan; 1924 and 1925. Wilson Bul., vol. 33, pp. 240–244, illus.

Account of two seasons' work on the Beaver Islands, including experience in trapping adult Gulls.

1926f. Lifting Power of the Mallard. Proc. Biol. Soc. Wash., vol. 39, p. 142.

A banded Duck caught in a No. 1 steel trap, which it carried off.

1927a. A Note on the Longevity of the Pintail. Condor, vol. 29, p. 115.

A bird banded at the mouth of Bear River, Utah, September 16, 1914 was killed October 16 or 17, 1926, at Brawley, California.

1927b. Notes on the Migration of Young Common Terns. Bul. Northeastern B. B. Assoc., vol. 3, pp. 23–28, map.

Birds banded on the Atlantic coast have been recovered in the West Indies and on the Coast of South America. One was taken on the coast of Mexico. Birds from the interior were recovered chiefly on the Gulf coast.

1927c. Traps for Bird Ringing. British Birds, vol. 21, pp. 134–150, figs. 1–11.

Describes and figures the Government Sparrow Trap; Flat or Drop Trap; Potter Trap; Chardonneret Trap; House Trap; Spring-pole Trap; and Water-lily-leaf Trap.

1927d. Returns from Banded Birds: 1923 to 1926. U. S. Dept. Agr. Tech. Bul. 32, pp. 1–96, illus.

Lists in tabular form 10,338 return records received between July 1, 1923 and December 31, 1926.

LLOYD, HOYES.

1923. Mystery Bands. Canadian Field Nat., vol. 37, p. 158.

Account of two bands, a plain one on a Junco, taken at Wood Island, N. B., and one made of twisted copper wire taken from a Swan, shot about 100 miles northeast of Good Hope, on the Mackenzie River.

1924a. Another Mystery Band. Canadian Field Nat., vol. 38, p. 76.

Aluminum band with the number "57" found on "teal," shot on Cariboo Lake, Plummer Township, Ont.

1924b. Official Canadian Record of Bird-Banding Returns. Canadian Field Nat., vol. 38, pp. 91–93; 133–135; 154–157; 177–179; 190–191.

Lists return records for birds banded in Canada and recovered in

Canada or elsewhere, or banded elsewhere and recovered in Canada. Data only, no discussion.

1925a. Mystery Bands. Canadian Field Nat., vol. 39, pp. 43–44.

A Duck (species unknown) killed carrying unmarked aluminum band, and a Pintail shot at Mountain View, Alberta, carrying a blue celluloid poultry band.

1925b. A Mystery Band Solved. Canadian Field Nat., vol. 39, p. 114.

A Kittiwake killed at Horse Island, Newfoundland, carried a Witherby band, attached at Farne Islands, England.

1925c. Official Canadian Record of Bird Banding Returns. Canadian Field Nat., vol. 39, pp. 18–19; 39–40; 54–55; 82–83; 119–122; 169–171; 191–193; 206–209.

Additional records of birds banded or recovered in Canada. No discussion.

1926a. More Mystery Bands. Canadian Field Nat., vol. 40, p. 88.

Two bands, stamped 312 and 314 taken from the legs of a Goose, killed on Currituck Sound, N. C., December 13, 1915.

1926b. Official Canadian Record of Bird Banding Returns. Canadian Field Nat., vol. 40, pp. 62–64; 106–110; 158–164.

Lists of records, no discussion.

1927a. A Mystery Solved. Bul. Northeastern B. B. Assoc., vol. 3, pp. 17–18.

A Kittiwake, carrying a "British Birds" band, was killed at Horse Island, Newfoundland, on August 12, 1924. [see 1925b.]

1927b. Point Pelee Should Have a Bird Banding Station. Canadian Field Nat., vol. 41, pp. 89–90.

Point Pelee lies on an important migration highway and a station there would undoubtedly yield important data.

1927c. Another Mystery Band. Canadian Field Nat., vol. 41, p. 139.

A Barn Swallow, found dead near Victoria, B. C., carried a red celluloid band inscribed with the number "16."

1927d. A Mystery Band. Canadian Field Nat., vol. 41, pp. 155–156.

A seamless band found in a market garden with a fragment of the radius of a Duck, probably a Greater Scaup. This association is probably only casual and the band is likely a pigeon band. Marked "40 P. B. 1917."

1927e. Official Canadian Record of Bird Banding Returns. Canadian Field Nat., vol. 41, pp. 66; 94–98; 141–144; 157–171; 191–195; 203–207.

The last two installments contain data from birds banded by Jack Miner at Kingsville, Ontario. On page 171 are the details of recovery of a European Widgeon captured on Cape Sable Island carrying a band marked V 20.14 P. Skovgaard, Viborg, Denmark.

LYON, WILLIAM I[SAAC].

1921. Bird Banding at Waukegan. The Audubon Bulletin, spring, pp. 16–20. (Published by the Illinois Audubon Society.)

First published report of Lyon's banding station; gives purpose of banding; lists his returns; and gives instructions for trapping.

1922a. Bird Banding as an Opportunity to Study Character and Disposition. Wilson Bul., vol. 29, pp. 34–36.

Reprinted in The Audubon Bulletin (Illinois Aud. Soc.) Spring, 1922, pp. 18–20.

Temperaments of individual birds are studied at the banding station. Table appended showing distance of "first flight" after liberation of different species and their actions while being handled.

1922b. Bird Banding Department. Wilson Bul., vol. 29, pp. 38–42.

A new department in the 'Wilson Bulletin' is started with this number. Work of several banding stations in the vicinity of Lake Michigan reviewed. Account of the New England [= Northeastern] Bird Banding Association, also is presented.

1922c. Notes from Waukegan Bird Banding Station. The Audubon Bulletin (Ill. Aud. Soc.), spring, 1922, p. 44.

1922d. Bird Banding Department. Wilson Bul., vol. 29, pp. 114–115.

Two papers, one by L. J. Cole on "The Early History of Bird Banding in America," and the other by Lyon, on "Flat Traps" in which he describes the trap that was found to be most successful in trapping 2,678 birds at Waukegan, Illinois during 1921.

1922e. Bird Banding Department. Wilson Bul., vol. 29, pp. 175–181.

Reviews various papers in 'The Auk,' The Ibis, etc. Includes a paper by M. J. Magee and one by H. L. Stoddard.

1922f. Bird Banding Department. Wilson Bul., vol. 29, pp. 226–233.

The subtitles are as follows, all by Lyon, Organization of the

Inland B. B. Assoc.; Grackles Attack Junco; Bird Characters and Dispositions; Owl Kidnaps Young Flickers; Woodpeckers Sleep Soundly; How Far Do Birds Go When They Fly South?

1923a. Bird Banding Department. Wilson Bul., vol. 30, pp. 45–53.

Subtitles are: "What Has Happened in New England," by S. Prentiss Baldwin; "Bird Banders and the Bird Census," by M. T. Cooke; and "Notice to Bird Banders," by Lyon, the last containing a note that Musselman is working at Thomasville, Ga.

1923b. Bird Banding Department. Wilson Bul., vol. 30, pp. 106–114.

Subtitles are: An Appeal to Bird Banders; Inland Bird Banding Association Council Meet in Chicago; (report from) Auburn Bird Banding Station; and A Personal Tribute (to Walter B. Barrows). All by Lyon but freely interspersed with notes from other stations.

1923c. Bird Banding Department. Wilson Bul., vol. 30, pp. 167–178.

Subtitles are: Eastern Bird Banding Association (organization of); Birds Banded in the Inland District (a freely annotated tabulation); Warning; Notes by M. J. Magee, Sault Ste. Marie, Mich.; and A Day's Banding Here and There, by S. E. Perkins, III.

1923d. Trapping and Banding the Tree-Climbing Birds. The Audubon Bulletin (Ill. Aud. Soc.), fall, 1923, pp. 33–36, illus.

Describes an efficient tree trap for Brown Creepers, Black and White Warblers, Woodpeckers, etc.

1923e. Bird Banding Department. Wilson Bul., vol. 30, pp. 227–240.

Subtitles are: Bird Banding Activities at Forty-first Stated Meeting of the American Ornithologists' Union at Cambridge, Mass.; A Convention Wholly Devoted to Bird Banding (annual meeting of the Inland B. B. Assoc.); Bibliography of Bird Banding in America, by S. Prentiss Baldwin; and Bird Colonies of the Great Lakes.

1924a. Bird Banding Department. Wilson Bul., vol. 31, pp. 37–53.

Subtitles are: Gull and Tern Banding Campaign; Banding Gulls in Lake Michigan, by Frederick C. Lincoln; Five Hundred Common Terns Banded, by Walter E. Hastings; Opportunity to Band Franklin Gulls; Reports of Cooperators for Period of 1923; Interesting Events; Honor for Inland Treasurer; Notes; Inland District Originates Banding.

1924b. Bird Banding Department. Wilson Bul., vol. 31, pp. 99–101, illus.

Subtitles are: Trapping the Tree Climbing Birds; Bird Banding—Are Birds Frightened or Injured, by S. Prentiss Baldwin.

1924c. Bird Banding Department. Wilson Bul., vol. 31, pp. 141–143.

Subtitles are: Gull and Turn [Tern] Banding on the Great Lakes During the Season of 1924, by R. M. Strong; Selection of a Trapping Station; 1925 Gull and Tern Campaign.

1924d. Bird Banding Department. Wilson Bul., vol. 31, pp. 217–218.

The subtitles are: Report from the Biological Survey; Help us Form Chains.

1925a. Bird Banding Notes. Wilson Bul., vol. 32, pp. 46–51, illus.

Subtitles are: Bird Banding Notes from the Recent National Meetings; and Report of the Tanager Hill Bird-Banding Station, 1923–1924, by Marie A. Commons. Also a note on Prof. Rowan's letter in THE AUK, concerning dangers of certain home-made traps.

1925b. Bird Banding News. Wilson Bul., vol. 32, pp. 95–103.

Subtitles are: Adventures in Bird Banding, by Kathleen M. Hempel; Notes from S. Prentiss Baldwin; and Miscellaneous Notes.

Under this last are the following items: Mystery Bands, by Frederick C. Lincoln; Blue Jay Notes, by E. C. Hoffman; and Caution in Banding; Improving Band Numbers; Trap Making; Entrance Funnels for Traps; House Sparrow Cross Bill; and A Report from Alabama for the Spring of 1925, all by Lyon who follows this section with items concerning future work, and reports from other stations.

1925c. Bird Banding News. Wilson Bul., vol. 32, pp. 177–182, illus.

Subtitles are: Some Experiences in Bird Banding, by Mrs. Marie Dales; Unofficial Bird Banding, by T. C. S[tephens]; and Miscellaneous Notes, the last being items from various trapping stations.

1925d. Bird Banding News. Wilson Bul., vol. 32, pp. 228–235.

Subtitles are: Banding Ducks at Scobey Lake, Missouri, by T. E. Musselman; Mystery Bands Numbers 1 and 2—Season 1925, by Frederick C. Lincoln; The Trap Habit, by Mrs. Marie A. Commons; and a series of notes by Lyon based upon data from his own station or from reports sent to him by other operators.

1926a. Bird Banding News. Wilson Bul., vol. 33, pp. 43–46.

Subtitles are: Acadians I Have Found, by S. E. Perkins, III; Winter Notes on the Blue Jays, by E. C. Hoffman; The Bronzed Grackles at Lakewood, Ohio, in 1925, by John A. Brady and E. C. Hoffman; and a few random notes by Lyon.

1926b. Bird Banding News. Wilson Bul., vol. 33, pp. 120–124.

Subtitles are: Chimney Swift Banding, by T. E. Musselman; Methods of Banding Chimney Swifts in the South, by Herbert L. Stoddard; and notes by Lyon, among which is the record of a Junco banded at Crystal Bay, Minnesota, and retrapped at Demarest, New Jersey; and a photograph of a trap suggested for Chimney Swifts.

1926c. Bird Banding News. Wilson Bul., vol. 33, pp. 162–172, illus.

All subtitles by M. J. Magee: Summary of Trapping and Banding Operations in Northern Michigan; An Exoneration of the Purple Finch; and Notes on the Evening Grosbeak.

1926d. Bird Banding News. Wilson Bul., vol. 33, pp. 240–248, illus.

The subtitles are: Banding Gulls and Terns in Lake Michigan, 1924 and 1925, by Frederick C. Lincoln; Banding Gulls and Terns on Upper Lake Michigan, by Lyon; and Work with the Gulls on the Sister Islands in Lake Michigan, by Harold C. Wilson. On Lyon's trip 847 birds were banded.

1927a. Bird Banding News. Wilson Bul., vol. 39, pp. 44–49.

One paper entitled: Banding Franklin's Gulls in Alberta, by William Rowan.

1927b. Bird Banding News. Wilson Bul., vol. 39, pp. 111–115.

Subtitles are: The Fun of Banding Chimney Swifts, by Constance and E. A. Everett; and Some Returns from Bird Banding, by Mrs. Marie Dales.

1927c. Bird Banding News. Wilson Bul., vol. 39, pp. 178–186.

Bird Banding in 1927 on Lakes Michigan and Huron, illus., deals with the author's trip that season which resulted in the banding of 2,057 Herring Gulls, 350 Ring-billed Gulls, 659 Caspian Terns, and others, a grand total of 3,154. Followed by a paper: Tern Banding on Lake Erie, by Edward S. Thomas, and a few notes from other cooperators inserted by Lyon.

1927d. Bird Banding News. Wilson Bul., vol. 39, pp. 240–246.

Subtitles are: A Method for Trapping and Banding Starlings,

by Edward S. Thomas; Munuskong State Park, by Dr. K. Christofferson; Marauding Crows and Magpies, by George Lang; Mourning Dove Facts, by Johnson A. Neff; Harris's Sparrow, by O. A. Stevens; Trapping Experiences with Rose-breasted Grosbeaks, by George Roberts; Some Banding Results in Minnesota, by N. L. Huff; and How Did the Bird Find Its Way Back, by Edward A. Everett.

MAGEE, M[ICHAEL] J[ARDEN].

1922. Notes from Sault Ste. Marie. Wilson Bul., vol. 29, pp. 175–177.

Miscellaneous notes concerning banding activities at this station.

1923. Notes by M. J. Magee, Sault Ste. Marie, Mich. Wilson Bul., vol. 30, pp. 174–176.

Miscellaneous notes on traps and plumages.

1924. Notes on the Purple Finch (*Carpodacus purpureus purpureus*). Auk, vol. 41, pp. 606–610.

Important data pertaining to the development of adult plumage of this species. Two years are required and the writer believes highly colored birds are at least four years old.

1926a. Summary of Trapping and Banding Operations in Northern Michigan. Wilson Bul., vol. 33, pp. 162–167.

Interesting review, in which several return records are incorporated. A specimen of *Zonotrichia l. gambeli* was trapped on May 21, 1925. Correction is noted of a statement published in The Auk (vol. 41, p. 607) regarding the time required by the Purple Finch to acquire adult plumage. The writer now says that this "is not acquired until the bird is at least a year old, and in many not until at least two years old." Additional data on this subject, based upon 3,908 Purple Finches taken at this station.

1926b. An Exoneration of the Purple Finch. Wilson Bul., vol. 33, pp. 167–169, illus.

Although large numbers of these birds were present in a few apple trees during the blossoming season, their budding did no harm, as the trees bore bumper crops of fruit, which were remarkably free from worms.

1926c. Notes on the Evening Grosbeak. Wilson Bul., vol. 33, pp. 170–172.

Notes on the plumage of these birds, based upon about 500 specimens taken at this trapping station.

1927a. Is There a Northern Race of the Robin? Bul. Northeastern B. B. Assoc., vol. 3, pp. 84–87.

Robins arriving in northern Michigan from the North, after the

local birds have departed, show conspicuous white eye-markings, and appear to be grayer above with a distinct olive cast on the back and rump. Discussed editorially on page 109.

1927b. Notes on Purple Finches. Bul. Northeastern B. B. Assoc., vol. 3, pp. 101–104.

A further discussion of the plumage development of this species. Several distant returns noted.

MAILLIARD, JOSEPH.

1926. A First Experience in Bird Banding. Condor, vol. 28, pp. 70–73.

More than 100 birds taken during a few days trapping in Modoc County, California. Mostly Gambel's Sparrows, but included also, were Song Sparrows, Golden-crowned Sparrows, and Towhees.

1927. Banding of Gambel Sparrows in the Fall of 1926. Condor, vol. 29, pp. 98–100.

A second season's work in Modoc County resulted in the banding of 943 White-crowned and Gambel's Sparrows, with four returns of birds banded in 1925. The age percentages were adults, 69, immatures, 31. In 1925 these percentages were 52 and 48.

MATHERS, AMY E. (MRS. ALBERT G. MATHERS).

1926. A Migrant Shrike Visits a Banding Station. Bul. Northeastern B. B. Assoc., vol. 2, p. 59.

Specimen captured at North Middleboro, Massachusetts, on December 28, 1925.

MAY, DR. JOHN B[ICHARD].

1924a. Bird Banding at Thomasville, Georgia, 1924. Auk, vol. 41, pp. 451–462, illus.

Report of the operation of this historic station. 463 new birds were banded and 55 returns obtained.

1924b. Pegleg and His Friends. Bird-Lore, vol. 26, pp. 317–321.

A story of this bird (53085) which was banded at Thomasville, Ga., in 1920, and was retaken in 1922, 1923, and 1924.

1925. Bird-Banding at Cohasset, Massachusetts. Bul. Northeastern B. B. Assoc., vol. 1, pp. 19–21, map.

Account of the stations operating in this area with notes on the birds banded at one point and recovered at nearby stations.

1926. The Results from Banding Barnstable Black-crowned Night Herons. Bul. Northeastern B. B. Assoc., vol. 2, pp. 25–28, map on cover.

From 2,500 banded birds, 68 returns have been obtained, from the immediate vicinity, north to Quebec, and south to Jamaica.

1927a. Nestling Sparrow Hawks. Bul. Northeastern B. B. Assoc., vol. 3, p. 20.

Brood of four young banded at Cambridge, Massachusetts.

1927b. The Sport of Bird Banding. The Totem Board, vol. 10, pp. 4 and 10.

General paper; promotion type.

McCABE, T. T.

1927. Bird Banding near Barkerville, British Columbia. Condor, vol. 29, pp. 206–207.

Interesting preliminary report of the stations operating in this region, dealing with traps, bait and the different species banded. Mentions Pine Siskins eating yellow clay and ashes.

McCANN, HORACE D[OLBEY].

1925. Notes from Chester County, Pennsylvania, 1923–1925. Bul. Eastern B. B. Assoc., no. 2, p. 22.

Report on several Song Sparrow returns at this station.

McFADDEN, MANUS.

1923. Wild Birds Studied by Tags. Popular Science Monthly, September, pp. 43–44. Illustrated by photos, partly from S. Prentiss Baldwin.

A popular paper compiled almost entirely from other published sources. Contains several misstatements.

MEANS, ROBERT W.

1925. A Phoebe Returns. Bul. Northeastern B. B. Assoc., vol. 1, p. 70.

Bird banded in 1924 at Topsfield, Massachusetts, is retaken in 1925 at the same nest.

MERRIMAN, R[OBERT] OWEN.

1924. Jack Miner and the Birds. Canadian Field Nat., vol. 38, pp. 59–60.

Review of Miner's book on the results of investigations of the migrations of Ducks and Geese by means of bands.

1926. Some Notes on Bait. Bul. Northeastern B. B. Assoc., vol. 2, pp. 10–12.

A bird bath proved most effective, but nesting materials also were attractive. Buttered toast crumbs, hemp seed, cheese-crumbs, green corn, nut meats, fruits and other baits are good.

MESSER, DON V[INAL].

1926. A Partial History of Fifteen Tree Sparrows. Bul. Northeastern B. B. Assoc., vol. 2, pp. 28–31.

Abundance of these birds around the traps is correlated with snowfalls. Of 15 banded in 1924, 8 were retaken in 1926.

MICHENER, HAROLD.

1925. Banding Purple Finches in Pasadena [Calif.]. Condor, vol. 27, pp. 217–223, illus., photos and charts.

A detailed study of this species, based largely upon repeats at one station.

1926. A Warbler Trap. Condor, vol. 28, pp. 49–50, illus.

Description of a cubical trap made of hardware cloth, closed by a sliding door across the top.

1927a. Traps for Banders. Condor, vol. 29, pp. 116–117.

Announcement that the Western Bird Banding Association has developed and has for sale, the 4-compartment Potter Trap, and a Warbler Trap. Each is described and figured.

1927b. Notes from the Three Barkerville Banding Stations. Condor, vol. 29, pp. 275–276.

General comment on the work done in British Columbia by Mr. and Mrs. T. T. McCabe, J. D. Cochran, and Mr. and Mrs. Joseph Wendle.

MICHENER, HAROLD AND JOSEPHINE.

1926. Studies on 1,170 Banded House Finches. Condor, vol. 28, pp. 254–257, table and chart.

Results based upon 3,627 captures, including repeats.

MIDDLETON, R[OBERT] J[ONES].

1924. Variation in the Junco. Bul. Eastern B. B. Assoc., no. 1, p. 5.

Many individuals trapped at Jeffersonville, Pennsylvania, were noted to have irregular white tail markings.

MINER, JACK. [=JOHN THOMAS].

1923. Jack Miner and the Birds and Some Things I Know About Nature, pp. 1–178 + illus. 53, Toronto.

Chapter 28, "The Migration of Our Canada Geese," is a notable contribution, illustrating with a map, the returns for Geese marked with his bands. The returns are from the Hudson Bay region, the south Atlantic coast and a few from points west to Illinois and Michigan. Returns from banded "Ducks" also are mentioned in other chapters.

MINER, MANLEY F[ORREST].

1925. Return of Banded Ducks. Bird-Lore, vol. 27, p. 106.

In a catch of 17 "Ducks" at Kingsville, Ont., [year?] one had been banded in 1918, 3 in 1919; 2 in 1920; and one in 1921.

1927. Tagged Geese. Bird-Lore, vol. 29, p. 183.

Of 282 Canada Geese caught at Kingsville, Ont., on April 6, 1927, one had been banded in 1918, 1 in 1923, 5 in 1924, and 14 in 1926.

MORGAN, ELEANORA S. (MRS. MORRIS H. MORGAN).

1925. Banding Hummingbirds. Bul. Northeastern B. B. Assoc., vol. 1, p. 68.

Several individuals at Northeast Harbor, Maine, were baited with sugared water, and marked with bands cut down to fit.

1926. Banded Hummingbird's Return. Bul. Northeastern B. B. Assoc., vol. 2, p. 89.

Two birds, banded in 1925 at Northeast Harbor, Maine were retaken there in 1926.

MUNRO, J[AMES] A[LEXANDER].

1925. Further Bird Notes from Southern Vancouver Island. Canadian Field Nat., vol. 39, pp. 156–158.

Comments on the banding of young Glaucous-winged Gulls, Golden-crowned Sparrows, Fox Sparrows, and Oregon Towhees.

MUSSELMAN, T[HOMAS] E[DGAR].

1923. Bird Banding at Thomasville, Ga., 1923. Auk, vol. 40, July, pp. 442–452, pls. xxv–xxvii.

Report of operations at this station during 1923. Data were obtained on a disease or parasite that affected the feet of Chipping Sparrows. (Report on this subject, published in 'The Auk,' April, 1928.) 610 new birds were banded, and 73 returns were obtained.

1925. Banding Ducks at Scobey Lake, Missouri. Wilson Bul., vol. 32, pp. 228–232, illus.

Account of banding 122 birds, mostly Mallards.

1926. Chimney Swift Banding. Wilson Bul., vol. 33, pp. 120–121.

Description of method employed and actions of the birds, in banding work with this species at Quincy, Illinois.

NEFF, JOHNSON A[NDREW].

1927. Mourning Dove Facts. Wilson Bul., vol. 34, pp. 243–244.

A banded fledgling Mourning Dove was found half eaten by a tortoise on which the writer had carved his name about ten years before.

NELSON E[DWARD] W[ILLIAM].

1920a. Bird Banding Work Being Taken Over by the Biological Survey. Wilson Bul., vol. 27, pp. 63–64. Also in Canadian Field Nat., vol. 34, p. 158; Condor, vol. 22, pp. 113–114; Auk, vol. 37, p. 512; and Bird-Lore, vol. 22, p. 157.

Announcement of the plans of the Biological Survey in taking over the banding work from the American Bird Banding Association.

1920b. Bird Banding. Report of Chief of Bureau of Biological Survey, p. 20.

Brief account of preparations made to carry on the bird banding work by the Biological Survey.

1921. Bird Banding. Report of Chief of Bureau of Biological Survey, pp. 17–18.

On June 30 the number of cooperators was 135. During the fiscal year 2,845 birds were banded.

1922. Bird Banding. Report of the Chief of Bureau of Biological Survey, p. 21.

The number of cooperators was increased to 490, and about 6,000 birds were banded. Three field trips were made for the banding of migratory waterfowl.

1923. Bird Banding. Report of Chief of Bureau of Biological Survey, pp. 23–24.

With cooperators increased to 851, the number of birds banded during the year was more than 25,000. Two field trips were made for the purpose of banding ducks.

1924. Bird Banding. Report of Chief of Bureau of Biological Survey, p. 21.

The number of cooperators was increased to 971, and 40,432 birds were banded. About 2,000 returns were received. A large number of Gulls and Terns were banded near St. James, Michigan.

Miscellaneous Circular number 18 published.

1925a. Danger in Bird Traps. Auk, vol. 42, pp. 304–307.

Letter to "Editor of 'The Auk' " in reply to letter of Prof. Wm. Rowan published in 'The Auk,' for January, 1925. Injuries sustained by small birds in properly constructed traps, are usually superficial, and have no permanent effect. Even these may be eliminated by proper safeguards.

1925b. Bird Banding. Report of Chief of Bureau of Biological Survey, p. 16.

About 1,100 cooperators were engaged in the work and 64,253 birds were banded, while returns numbered 3,187. A cooperative expedition to the mouth of the Yukon River banded a large number of game birds. Department Bulletin number 1268 entitled "Returns from Banded Birds, 1920–23" was published.

1926. Bird Banding. Report of Chief of Bureau of Biological Survey, pp. 11–12.

The number of cooperators was increased to 1,134 and 68,418 birds were banded; 3,351 returns were received. Department Circular, number 362, was published.

1927. Vanishing Migratory Birds. The Saturday Evening Post, February 19, 1927, pp. 12–13, 92, 94, 97, illus., maps.

Deals chiefly with the reduction of waterfowl in the West through alkali poisoning and other causes. Cites results of banding on the Bear River Marshes and in Alaska. Refers to the apparent relation of the 100th meridian to the ranges of birds of the East and West.

1928. Bird Banding: The Telltale of Migratory Flight. Nat. Geog. Mag., vol. 53, pp. 91–132, January.

A well illustrated paper reviewing the work up to this point; references to many notable returns and special work.

Note:—This paper is outside the period covered by this bibliography, but included because it is of exceptional character and well summarizes activities of the past eight years.

NICHOLS, J[OHN] T[READWELL].

1922a. The Season. Bird Lore, vol. 24, p. 43.

Records returns of 2 Song Sparrows and a Junco from R. H. Howland, Upper Montclair, N. J.

1922b. The Season. Bird Lore, vol. 24, p. 99.

Records of Song and Tree Sparrows banded by B. S. Bowdish at Demarest, New Jersey.

1923. Inland Bird Banding Association. Forest and Stream, vol. 93, pp. 122, 143, and 154–155.

Brief history of bird-banding and its results; notice of organization of the Inland Bird Banding Association. Contains map showing several returns of Ducks banded at Lake Scugog, Ontario.

1924. Bulletin of the Eastern Bird Banding Association, no. 1, October.

Contains notes of interest from various cooperators of the Eastern Bird Banding Association and a directory of its members.

1925a. The Season. Bird-Lore, vol. 27, p. 11.

A Crow banded at Tabusintac, N. B., was found dead at Paterson, N. J., and a Junco banded in 1922 at Demarest, N. J., has returned each winter since.

1925b. The Season. Bird-Lore, vol. 27, p. 113.

A Purple Finch banded at Demarest, N. J., was retaken the following season; in the interval moulting into the plumage of a "well-colored male."

1925c. The Season. Bird-Lore, vol. 27, p. 258.

A banded Brewster's Warbler returns and is again mated with a female Golden-winged Warbler, at Wyanokie, N. J. A female Hooded Warbler also is noted as a return.

1925d. Spring Song Sparrows at Baltimore, Md. Bul. Eastern B. B. Assoc., no. 2, pp. 17–20.

An analysis of data on these birds obtained by Everett C. Myers.

1927a. The Season. Bird-Lore, vol. 29, p. 54.

A banded White-breasted Nuthatch at Demarest, N. J., apparently is a resident individual.

1927b. The Age of Banded Birds. Bul. Northeastern B. B. Assoc., vol. 3, pp. 49–52.

Age records are given for a series of banded birds of which a Crow, a Chimney Swift, and a Brown Thrasher lived eight years.

NICHOLS, J[OHN] T[READWELL] & MAUNSELL S[CHIEFFELIN] CROSBY.

1927. Some Data from a Rhinebeck [N. Y.] Banding Station. Bul. Eastern B. B. Assoc., no. 3, pp. 7–11, graph.

Discussion of data obtained, with reference to migration, chiefly of winter and transient species.

NICHOLS, JOHN T[READWELL] AND R[ANDOLPH] H. HOWLAND.

1925. Summary. Bul. Eastern B. B. Assoc., no. 2, p. 23.

Mention of Song Sparrow records from several stations.

OBERHOLSER, HARRY C[HURCH].

1923. Bird Banding as an Aid to the Study of Migration. Auk, vol. 40, pp. 436–441.

A review of American and European banding results as applied to migration.

OLDYS, HENRY (HENRY WORTHINGTON OLDS).

1908. Capture of a Tagged Canvasback Duck. Auk, vol. 25, p. 80.

A duck killed in Manahawkin Bay, New Jersey, carried a band marked "T. J. O. D. 48" and another killed at Beach Haven, New Jersey, carried one inscribed "T. J. O. D. 49," evidently of the same series.

PACKARD, WINTHROP.

1926. A Leach's Petrel Return. Bul. Northeastern B. B. Assoc., vol. 2, p. 87.

A banded bird is retaken in the same burrow, three years after banding, at Great Duck Island, Maine.

PARKER, HERBERT.

1926. A Few Lancaster [Massachusetts] Bird Banding Notes. Bul. Northeastern B. B. Assoc., vol. 2, pp. 61–65.

General account of the activities of this station with table of returns obtained.

PEARSE, THEED.

1923. Banding Glaucous-winged Gulls, with Other Notes on a Colony in Southern British Columbia. Canadian Field Nat., vol. 37, pp. 132–135.

An account of banding these Gulls at a colony in the Gulf of Georgia, British Columbia.

PEARSON, T[HOMAS] GILBERT.

1923. Bird-Banding as a Means of Bird Study. Bird-Lore, vol. 25, pp. 83–84.

Short account of the history of banding, and the problems to be solved by the method.

PERINE, THELMA R. AND KEBLE B.

1925. Winter Habits of the White-throated Sparrow at Chapel Hill, North Carolina. Auk, vol. 42, pp. 447–449.

Notes on the "group habit" of these birds in winter quarters.

PERKINS, IRVING J.

1926. Photographing and Banding Red-tailed Hawks. Yearbook, Public Museum, Milwaukee, Wisconsin, 1924, vol. 4, pp. 44–46, illus. (October 9, 1926).

Two young Hawks were banded at a nest in Waukesha, Wisconsin, and one was recaptured in the fall of the same year at Apple River, Illinois.

PERKINS, SAMUEL E[LLIOTT], III.

1923. A Day's Banding Here and There. Wilson Bul., vol. 30, pp. 176–178.

Account of an automobile trip in Indiana, in the course of which 28 fledglings were banded.

1925. Report on Birds Banded at Indianapolis, Indiana. Aud. Bul. 1925, pp. 27–28.

Notes on his station and distant returns, with comments on results by other operators working at Indianapolis.

1926a. Acadians I Have Found. Wilson Bul., vol. 33, pp. 43–44.

Both parents were trapped and banded by using the fledglings in the trap.

1926b. An Unusual Nesting Site of the Prothonotary Warbler. Wilson Bul., vol. 33, p. 233.

1926c. Handling Freaks. Bird-Lore, vol. 28, pp. 125–126.

A Mourning Dove, captured at Thomasville, Ga., with its upper mandible deformed, was in good physical condition. A Brazilian Cardinal was captured at Indianapolis, Ind. The author believed it a migrant rather than an escaped cage bird.

PIERCE, WRIGHT M[CEWEN].

1925. Return of Banded Birds Removed to a Distance. Condor, vol. 27, pp. 120–121.

Of 12 Gambel's Sparrows taken eleven miles from the banding station at Claremont, California, and there released, four returned within 13 days; but when taken about 50 miles and across an intervening mountain range, none returned.

PIERCE, WRIGHT M[CEWEN] AND E[USTACE] L[OWELL] SUMNER, JR.

1927. Some Results of Removing Banded Birds to a Distance. Condor, vol. 29, pp. 115–116.

Experiments at Big Bear Lake, California, with *Junco oreganus* showed that many would return to the trapping station when removed for distances up to four miles.

PIRNIE, MILES D[AVID].

1927. Banding Black Ducks. Bul. Eastern B. B. Assoc., no. 3, pp. 11–12.

Banded Black Ducks at Cayuga Lake, New York, repeat at the point of banding.

POTTER, JULIAN K[ENT].

1925. The Season. Bird-Lore, vol. 27, p. 259.

A Barn Owl, banded at Westville, New Jersey, returned to the same nest and again hatched seven young.

1926a. The Season. Bird-Lore, vol. 28, p. 58.

Barn Owl No. 233482, banded at Westville, New Jersey, was shot at Wilmington, North Carolina.

1926b. The Season. Bird-Lore, vol. 28, p. 402.

Return records of several birds banded in New Jersey, by J. A. Gillespie, are quoted.

1927a. The Season. Bird-Lore, vol. 29, p. 126.

Returns are noted for several birds banded at Haddonfield, New Jersey, and Glenolden, Pennsylvania.

1927b. The Season. Bird-Lore, vol. 29, p. 425.

An Osprey banded at Seven-Mile Beach, New Jersey, was recovered at Upper Tract, West Virginia.

PRESTON, CHARLES H.

1926. Barn Swallow Returns. Bul. Northeastern B. B. Assoc., vol. 2, pp. 57–58.

From 88 adult and fledgling birds banded over three years time, at Danvers, Massachusetts, eleven returns are obtained, all from birds adult at time of banding.

QUAYLE, ERNEST H[ARRISON].

1924. White-throated Sparrow Banded on the Stanford Campus. Condor, vol. 26, p. 197.

A rare bird in California, captured on December 26, 1923.

RAPP, F[REDERICK] W[ILLIAM].

1926. Banding Great Horned Owls. Wilson Bul., vol. 33, pp. 175–176.

An interesting account of an experience in banding three young Horned Owls.

REDINGTON, PAUL G[OODWIN].

1927. Bird Banding. Report of Chief of Biological Survey, p. 8.

The number of cooperators was increased to 1,296, and the total number of birds banded during the year was 91,848. Returns received numbered 4,445. Field work in the Bear River marshes of Utah resulted in the banding of about 1,000 Ducks.

ROBERTS, GEORGE.

1920a. The Return of the Grosbeak. Bird-Lore, vol. 22, pp. 249–250.

A Rose-breasted Grosbeak, banded in 1919 at Lake Forest, Ill., was recaptured in 1920.

1920b. The Tragic Story of a Titmouse. Bird-Lore, vol. 22, pp. 270–273.

Account of a Tufted Titmouse that remained in the vicinity of the station at Lake Forest, Ill., for 14 months, finally obtaining a mate and nesting, only to have the mate killed by a cat.

1927. Trapping Experiences with Rose-breasted Grosbeaks. Wilson Bul., vol. 34, p. 244.

The author, who has been unusually successful with these birds, recounts his experiences and notes return records.

ROBERTSON, JOHN McB[RAIR].

1926. Some Notes on the Cliff Swallow. Condor, vol. 28, pp. 244–245.

Two young Swallows banded at one colony near Buena Park, California, are retaken at another, half a mile distant, five days later.

ROBINSON, HELEN J.

1927a. Experiences with Nesting Chipping Sparrows and Tree Swallows. Bul. Northeastern B. B. Assoc., vol. 3, pp. 42–44.

Swallows successfully compete with English Sparrows for possession of nest boxes at Brewer, Maine. The Chipping Sparrows brought off their young several days ahead of the Swallows, although the eggs of both sets hatched on the same day.

1927b. Tree Swallow Habits and Behavior at Brewer, Maine. Bul. Northeastern B. B. Assoc., vol. 3, pp. 89–93.

Interesting account of the nesting activities of these birds. Table shows details throughout the entire period.

ROPES, WILLIS H.

1925. Bird Banding by Club Members in 1924. Bul. Essex Co., Ornith. Club, vol. 6, pp. 23–26.

A general report of the banding done at several stations in Essex County, Massachusetts, operated by members of the club.

1926. Bird Banding Results for 1925. Bul. Essex Co. Ornith. Club, vol. 7, pp. 30–33.

Four Essex County stations banded during the year 974 birds, and obtained 77 return records.

ROWAN, WILLIAM.

1925. Danger in Bird Traps. Auk, vol. 42, pp. 171–173.

A letter to the editor in which the Government Sparrow Trap as usually made, is criticised, for causing injuries to captured birds. See reply by E. W. Nelson, in Auk, vol. 42, pp. 304–307.

1927. Banding Franklin Gulls in Alberta. Wilson Bul., vol. 34, pp. 44–49.

Account of a well-planned expedition to a large colony in the vicinity of Edmonton. A total of 6,725 birds were banded.

ROWLAND, EDWARD GOULD.

1925a. Notes on Swamp Sparrows. Bul. Northeastern B. B. Assoc., vol. 1, pp. 40–42.

Plumage notes on immature birds, also some comment on a few sick birds.

1925b. A Problem in Ecology. Bul. Northeastern B. B. Assoc., vol. 1, p. 49.

Swamp Sparrows will frequent some swamps while avoiding others apparently equally satisfactory.

RUHL, H. D.

1926. Banding Barred Owls. Wilson Bul., vol. 33, p. 175.

While working with the young, the writer is repeatedly struck by the female and, on one occasion, by the male,

SALMON, MARY B.

1924. My Robins. Bird-Lore, vol. 26, pp. 98–99.

Account of a brood of young robins banded at Tarkio, Mo.

SARGENT, HERBERT G[UY].

1926. Chewink Returns. Bul. Northeastern B. B. Assoc., vol. 2, p. 14.

Two birds, banded in 1924 at Manchester, New Hampshire, are retaken at the same station in 1925.

SAUNDERS, FREDERICK A[LBERT].

1926. Banding Results in Maine. Bul. Northeastern B. B. Assoc., vol. 2, pp. 22–24.

Much success resulted in the use of water as bait. Several return records are noted.

SAUNDERS, W[ILLIAM] E[DWIN].

1927. Crow Trapping with Jack Miner. Canadian Field Nat., vol. 41, p. 86.

Several Crows are marked with a Biological Survey band on one foot and a "Jack Miner band" on the other.

SETON, ERNEST THOMPSON.

1921. Early Bird Banding. Auk, vol. 38, p. 611.

Short account of some "snowbirds" marked with a black spot of printer's ink on the breast; also mentions the placing of "lockets" on the necks of a Sparrow Hawk and a Robin.

SHARP, DALLAS LORE.

1926. Tag-Day for the Birds. St. Nicholas Magazine, June, 1926, pp. 765–767, and 832, illus.

A popular paper in which the banding material is taken from other published sources.

SMITH, LESTER W[HEADON].

1926. Ruffed Grouse No. 332439 of the Stone Bird Sanctuary. Bul. Northeastern B. B. Assoc., vol. 2, pp. 74–78.

Remarkable tameness of this bird forms the theme of this paper.

SMITH, WENDELL P[HILLIPS].

1923. Experiences of a Bird Bander. Bird-Lore, vol. 25, p. 245.

Station at Wells River, Vermont, captures nine White-winged Crossbills, a Sparrow Hawk, a Vesper Sparrow, and others.

1925a. Wells River (Vermont) Bird Notes. Bul. Northeastern B. B. Assoc., vol. 1, pp. 30–31.

Observations on birds frequenting a banding station.

1925b. Notes on Tree Sparrows. Bul. Northeastern B. B. Assoc., vol. 1, pp. 49–50.

At dusk, small flocks of six to eight birds, left the feeding grounds of the trapping station at Wells River, Vermont, and flew to a pine covered area about one-third of a mile distant, where the night was spent.

1926. A Study of the Tree Sparrow's Migration in the Connecticut River Valley. Bul. Northeastern B. B. Assoc., vol. 2, pp. 19–22.

An interesting preliminary report, showing how banding data may be used in the solution of migration problems, particularly when series of stations can cooperate in the work.

1927a. Tree Sparrow Returns and Migration. Bul. Northeastern B. B. Assoc., vol. 3, pp. 5–7.

A development of the study outlined in a previous paper. Two stations now cooperating.

1927b. A Song Sparrow Recovery. Bul. Northeastern B. B. Assoc., vol. 3, p. 48.

A bird banded at Wells River, Vermont, was recovered at Wadesboro, North Carolina.

1927c. Notes on the Prenuptial Moult of the Tree Sparrow. Bul. Northeastern B. B. Assoc., vol. 3, pp. 82–84.

This moult, which appears to be largely or wholly restricted to head tracts, occurs usually in March, but in 1927, indications were noted on February 16.

SPEAR, JAMES JR.

1927. Sparrow Returns at Wallingford, Delaware County, Pennsylvania. Bul. Eastern B. B. Assoc., no. 3, pp. 12–13.

Several Song Sparrows return to the station and one is recaptured at Williamstown, North Carolina.

SPROT, G[EORGE] D[OVETON].

1924a. To Make the Detachable Funnel Trap for Bird Banding. Canadian Field-Nat., vol. 38, pp. 136–137.

Gives full directions and a diagram for making this trap.

1924b. *Zonotrichia* on Vancouver Island. Condor, vol. 26, pp. 231–232.

*Zonotrichia l. gambeli* is rather rare and appears to travel with *Z. coronata* which moves in "two columns." *Z. l. nuttalli* breeds on the island and moves southward in small groups.

1925a. Some Notes on "Resident" Bird-Banding on Vancouver Island, British Columbia. Canadian Field Nat., vol. 39, pp. 10–12.

A general paper, containing many interesting notes relative to the California Quails, Steller Jays, Oregon Towhees, and Oregon Juncos frequenting the station.

1925b. A Banding Outfit and Some Traps. Condor, vol. 27, pp. 118–120, illus.

A description of a compact kit for carrying bands, pliers, notebook, etc., two traps, and collecting cages.

1925c. Bird Banding Report—September 1924 to March 1925. "Mavisburn" Banding Station, Mill Bay, Victoria [=Vancouver] Island, B. C. Canadian Field Nat., vol. 39, pp. 179–180.

Station has been moved but adjoins the region of previous operations. General report of activities, with a few returns.

1925d. Dangers in Bird Banding. Condor, vol. 27, pp. 230–232.

An important paper, discussing the reasons why the author believes wire cage traps, such as the Government Sparrow Trap, may cause serious injuries to birds. The use of nets is endorsed.

1925e. Bird-Banding Report for May, June, July, 1925. "Mavisburn" Banding Station, Millbay, V. I., B. C. Canadian Field Nat., vol. 39, pp. 202–203.

Crows were responsible for the destruction of the young from several nests. An interesting account of their methods.

STEPHENS, T[HOMAS] C[ALDERWOOD].

1925. Unofficial Bird Banding. Wilson Bul., vol. 32, pp. 179–181.

A review of some of the miscellaneous return records that have resulted from marking birds in various ways.

1927. Editor's Note. Wilson Bul., vol. 34, p. 186.

Directs attention to dates of banding of young Common Terns, mentioned in a preceding paper (by E. S. Thomas). Suggests that a severe storm destroyed first sets of eggs of these birds.

STEVENS, O[RIN] A[LVA].

1927. Harris Sparrow. Wilson Bul., vol. 34, p. 244.

About 280 of these have been banded at this station at Fargo North Dakota, representing three migration seasons.

STODDARD, H[ERBERT] L[EE]

1922. Bird-Banding on Bonaventure Island. Wilson Bul., vol. 29, pp. 180–181.

An account of banding Gannets and Murres, with notes on the possibilities of this colony if the work is continued in succeeding seasons.

1925a. Trapping and Banding Operations. Progress on Cooperative Quail Investigation: 1924, pp. 8–11, illus.

Describes methods employed to obtain Quail for banding. Both ground traps and "aerial nets" were used.

1925b. Bird Banding in Milwaukee and Vicinity. Yearbook of the Public Museum of the City of Milwaukee, 1923, pp. 117–123, figs. 73–75, vol. 3. Date of Pub. April 29, 1925.

An account of operations including a description of the "aerial nets" used to capture Robins and others from roosts. More than 100 small Shorebirds also were taken.

1926a. Methods of Banding Chimney Swifts in the South. Wilson Bul., vol. 33, pp. 122–123.

With specially constructed traps, several hundred Swifts were captured at Tallahassee, Fla., and Thomasville, Ga. These traps are described briefly and mention made of other features of this activity. Several returns noted.

1926b. Results of Trapping and Banding Experiments. Report on Cooperative Quail Investigation: 1925–1926, pp. 21–31.

2,100 native Quail have been banded from which 135 returns were obtained. These data throw light on movement of individuals, covey problems, covey ranges, organization of coveys, sex ratio, and weights.

STONE, WITMER.

1920a. Baldwin's Bird-Banding by Means of Systematic Trapping. Auk, vol. 37, April, pp. 314–315.

Review.

1920b. Notes and News. Auk, vol. 37, pp. 512–513.

Editorial, announcing that the Bureau of Biological Survey has taken over the work of the American Bird Banding Association. Reviews plans for future work.

1921. Lincoln's Instructions for Bird Banding. Auk, vol. 38, p. 478.

Review of U. S. Dept. Agr. Circular No. 170.

1922a. Notes and News. Auk, vol. 39, p. 150.

Notice of the organization of the New England Bird Banding Association.

1922b. Notes and News. Auk, vol. 39, p. 302.

Short account of the objects of the Northeastern Bird Banding Association.

1923a. Wetmore on Migration Records from Birds Banded at Salt Lake, Utah. Auk, vol. 40, p. 554.

Short review of U. S. Dept. Agr. Bul. 1145.

1923b. Stoner on Bird Banding and Incidental Studies. Auk, vol. 40, p. 556.

Review.

1923c. Notes and News. Eastern Bird Banding Association. Auk, vol. 40, pp. 723–724.

Short article announcing the formation of the Eastern Bird Banding Association.

1924a. Lincoln's Instructions for Banding Birds. Auk, vol. 41, pp. 621–622.

Review of U. S. Dept. Agr. Miscellaneous Circular No. 18.

1924b. The Ornithology of Today and Tomorrow. 'The Fiftieth Anniversary of the Nuttall Ornithological Club, December 1923,' pp. 7–25. Published by the Club.

On pages 17–18 there is a general account of bird banding, setting forth its possibilities and concluding with the statement that it "is going to be a big part of the ornithology of tomorrow."

1925a. Dr. Stone on Bird Banding. Bul. Northeastern B. B. Assoc., vol. 1, pp. 1–2.

Reprint of the bird banding portion of Dr. Stone's address delivered before the Nuttall Ornithological Club on its fiftieth anniversary.

1925b. Recent Literature. Recent Publications of the U. S. Biological Survey. Auk, vol. 42, pp. 153–154.

Review of U. S. Dept. Agr. Bul. 1268, Returns from Banded Birds, 1920–23.

1925c. Recent Literature. Crosby on Bird Banding. Auk, vol. 42, p. 292.

Review.

1925d. Recent Literature. Quail Investigation in 1924. Auk, vol. 42, p. 293.

Review of Report of Cooperative Quail Investigation by H. L. Stoddard.

1925e. Recent Literature. Jack Miner and the Birds. Auk, vol. 42, p. 454.

Review.

STONER, DAYTON.

1921a. Bird Banding and Incidental Studies. Iowa Acad. Sci., vol. 28, pp. 151–159.

Describes the banding method and gives details of the studies of different species.

1921b. Bird Banding in Northern Michigan During the Season of 1920. Wilson Bul., vol. 28, pp. 83–90.

Report of a season's banding at Michigan, Biological Station, Douglas Lake, Mich., preceded by remarks on the development of the method, procedure, etc.

1922. Behavior of Trapped and Banded Birds. Iowa Acad. Sci., vol. 29, pp. 225–228.

Observations on several individuals of different species.

1924. Trapping Birds at Iowa City During 1923. Proc. Iowa Acad. Sci., vol. 31, pp. 451–453.

During the year 112 birds of six species, were banded.

1925a. Observations and Banding Notes on the Bank Swallow. Auk, vol. 42, pp. 86–94.

A study of the nesting habits of this species, in the course of which, both adults and fledglings were banded.

1925b. Bird Banding at the Iowa Lakeside Laboratory During the Summers of 1923 and 1924. Wilson Bul., vol. 32, pp. 15–17.

A total of 651 birds, representing 25 species, were banded.

1925c. Bird Banding. Univ. Iowa Service Bul., vol. 9, no. 49, pp. 1–6.

Radio address, explaining the work and its purposes.

1926a. Trapping Birds at Iowa City During 1924. Proc. Iowa Acad. Sci., vol. 32, pp. 419–422.

Devoted principally to notes and comments on the actions of birds while in the traps or in the hand.

1926b. Observations and Banding Notes on the Bank Swallows—II. Auk, vol. 43, pp. 198–213.

A continuation of this study, containing data pertaining to mating, nesting, parasites, etc. Returns were obtained from the previous season's work.

STORER, TRACY I[RWIN].

1920. Bird Banding by Means of Systematic Trapping. By S. Prentiss Baldwin. Condor, vol. 22, pp. 114–115.

Review.

STRONG, R[EUBEN] M[YRON].

1924. Gull and Turn [Tern] Banding on the Great Lakes During the Season of 1924. Wilson Bul., vol. 31, pp. 141–143.

A general summary of the work of all operators in this district, in 1924. The total number of Herring Gulls banded was 873; Caspian Terns, 626; and Common Terns, 1,832.

SUMNER, E[USTACE] L[OWELL,] JR. AND WRIGHT M[CEWEN] PIERCE.

1927. Some Results of Removing Banded Birds to a Distance. Condor, vol. 29, pp. 115–116.

Experiments with *Junco oreganus* at Big Bear Lake, Calif., showed that many would return to the trapping station when removed for distances up to four miles.

SUTTON, GEORGE MIKSCH.

1927. Loon Banded in Pennsylvania Killed in Ontario. Canadian Field Nat., vol. 41, p. 139. Reprinted in the Wilson Bul., vol. 34, 1927, pp. 170–171.

Bird marked with a band of the Pennsylvania Game Commission on May 12, 1926, at Harrisburg, was evidently killed by a skunk at Brighton, Ontario, on July 31, 1926.

TABER, WILLIAM BREWSTER, JR.

1926. Special Studies of Mourning Doves by the Bird Banding Method. Wilson Bul., vol. 33, pp. 172–174.

Doves are attracted by salt at Kansas, Illinois. During May, males are caught in early morning and late afternoon, the females trapped during the middle of the day, indicating division of incubation duties. No evidence of permanent mating. Evidence

of two major diseases, one being avian diphtheria and the other the foot disease which he suggested might be "ergotism."

1927. The Mentality of the Crow. Wilson Bul., vol. 34, pp. 5–8.

An account of trapping these birds indicating that their mental processes are very similar to those of other birds and that their "language" is a language of action.

TABER, WILLIAM BREWSTER, 3D.

1924. A Young Bird Bander. Bird-Lore, vol. 26, p. 141.

Quail come into an old chicken house to take dust baths, and are there caught for banding.

TALBOT, L[ESTER] R[AYMOND].

1922a. Bird-Banding at Thomasville, Georgia, in 1922. Auk, vol. 39, pp. 334–350.

A detailed report of the season's work at this station. Several interesting returns are discussed.

1922b. Wanted—More Bird Banders. Wilson Bul., vol. 29, p. 175.

The results of bird banding will increase in geometrical progression as the number of bird-banders increase.

TAVERNER, P[ERCY] A[LGERNON].

1904. The Tagging of Birds. Bul. Michigan Orni. Club, vol. 5, pp. 50–51.

A letter to the Editor advocating banding work and describing an aluminum band he is using.

1906a. A Tagged Flicker. Wilson Bul., vol. 18, p. 21.

A band was placed on a half grown Flicker at Keota, Keokuk Co., Iowa, May 29, 1905, by Chas. Kirkpatrick. Killed by J. E. Ross of Many, Sabine Parish, Louisiana.

1906b. Tagging Migrants. Auk, vol. 23, p. 232.

Short account on the value of banding wild birds. Several field workers have been using tags supplied by the writer.

1920. Migration Studies by Bird Banding. Canadian Field Nat., vol. 34, pp. 158–159.

A brief review of banding work, its possibilities and results.

TEST, LOUIS AGASSIZ.

1927. Two Years' Bird-Banding at West Lafayette, Indiana. Proc. Indiana Acad. Sci., vol. 36, pp. 319–321.

During this period 500 birds were banded, representing 32 species. Recaptures amount to 21.4 per cent of the total. A few station returns obtained and two are reported from other points.

THAYER, JOHN E[LIOT].

1911. General Notes. Auk, vol. 28, p. 255.

A Baldpate shot at Currituck, North Carolina carried a band marked "7206 R."

THOMAS, EDWARD S[INCLAIR].

1927a. Tern Banding on Lake Erie. Wilson Bul., vol. 34, pp. 184–186.

As the result of a four day expedition to Tern colonies in Lake Erie, 1,090 birds were banded. Of these, 22 were adults trapped at their nests.

1927b. A Method for Trapping and Banding Starlings. Wilson Bul., vol. 34, pp. 240–241.

The birds are captured at winter roosts near Columbus, Ohio, in barn cupolas; electric flashlights used.

TUFTS, ROBIE W[ILFRID].

1927a. Banding of Yellow Warblers in Nova Scotia: Bul. Northeastern B. B. Assoc., vol. 3, pp. 3–5.

An interesting account of the banding of a pair of these birds and their brood of young. The male returned the following season and was recaptured.

1927b. Banding Great Black-backed Gulls at Lake George, Nova Scotia. Bul. Northeastern B. B. Assoc., vol. 3, pp. 12–13.

More than 200 young were banded. Two distant return records are mentioned, the birds being reported from St. Marys Bay, Nova Scotia, and Wellfleet, Massachusetts.

WARD, HENRY B[ALDWIN].

1924. Banding White Pelicans. Condor, vol. 26, pp. 136–140, map.

Seventy-five young birds were banded in Yellowstone Lake, Yellowstone National Park. Seven returns indicate the flight south through Idaho and Utah. One was recovered near Vera Cruz, Mexico.

WATSON, JOHN B[ROADUS].

1908. The Behavior of Noddy and Sooty Terns. Pub. no. 103, Carnegie Inst. of Wash., Paper VII, pp. 187–225.

In the course of studies at Bird Key, Tortugas Islands, Fla., Sooty Terns were marked with oil paint and taken for varying distances from their nests, and then released. Two released opposite Cape Hatteras, North Carolina, 850 miles air-line from

Bird Key, returned in 5 days. Two birds of each species released at Havana, Cuba, were back at the colony the following day.

WATSON, J[OHN] B[ROADUS], AND K[ARL] S[PENCER] LASHLEY.

1915. An Historical and Experimental Study of Homing. Papers from Dept. of Marine Biology, Carnegie Inst. Wash., vol. 7, pp. 1–60.

Previous work with Noddy and Sooty Terns is renewed (loc. cit.) and record of further experiments is added. Marked birds returned to the colony (Bird Key, Florida) from Galveston, Texas, and Mobile, Alabama.

WETMORE, [FRANK] ALEXANDER.

1915. Mortality Among Waterfowl Around Great Salt Lake, Utah. U. S. Dept. of Agr. Bull. 217, pp. 1–10, illus.

On page 10 the announcement is made that 270 Ducks that had been cured of alkali poisoning, were banded with bands marked "Notify U. S. Dept. Agr., Wash., D. C." Twenty return records had been received.

1918. The Duck Sickness in Utah. U. S. Dept. of Agr. Bul. 672, pp. 1–26, illus.

On page 25, under the heading: "Release of Banded Birds," the statement is made that about 1,000 cured Ducks and other birds had been banded, the bands being of two types and carrying the legends: "Notify U. S. Dept. Agr., Wash., D. C." and "Notify Biological Survey, Washington, D. C." 170 returns had been received from points west to California, east to Missouri, north to Saskatchewan, and south to New Mexico.

1923. Migration Records from Wild Ducks and Other Birds Banded in the Salt Lake Valley, Utah. U. S. Dept. of Agr. Bul. 1145, pp. 1–16, illus.

Detailed report of banding 1,241 sick Ducks in the Bear River Marshes. Returns of 182 are listed by species.

1926. The Migrations of Birds. Cambridge, Harvard Univ. Press, pp. viii + 217, illus.

Contains many references to banding, which is used to illustrate certain features of the subject. An excellent book.

WHARTON, WILLIAM P[ICKMAN].

1926. Dickcissel (*Spiza americana*) in Massachusetts. Auk, vol. 43, pp. 246–247.

A specimen captured in a trap at a banding station.

1927. Savannah and White-throated Sparrow Returns. Bul. Northeastern B. B. Assoc., vol. 3, p. 107.

Of 23 Savannah Sparrows and 95 White-throated Sparrows, banded at Summerville, South Carolina, in 1926, three of the former and seven of the latter, are retaken at the same place in 1927.

WHEELER, W[ILLIAM ?] W[EBB ?].

1925. The Amazing Travels of Your Little Farm Birds. Farm and Fireside, vol. 49, pp. 12–13, 38–39, illus.

Popular paper based on other published articles.

WHITE, FRANCIS BEACH.

1927a. Common and Arctic Terns at Seabrook, New Hampshire. Bul. Northeastern B. B. Assoc., vol. 3, pp. 36–37.

149 young are banded.

1927b. Minute Observations on the Manner of Birds. Bul. Northeastern B. B. Assoc., vol. 3, p. 70.

Banding opens great possibilities for such studies. Details are given of the actions of a Hermit Thrush kept in captivity for a few days.

WHIPPLE [WHITTLE], CHARLES LIVY.

1922. The New England Bird Banding Association. Wilson Bul., vol. 29, pp. 40–42.

Account of the organization and objects of this society.

WHITTLE, CHARLES LIVY.

1923. Some Aspects of the Group Habit Among Birds. Auk, vol. 40, pp. 224–240.

From a study of banding and other data, the writer concludes that there is a well defined tendency for certain individuals to group together, particularly in winter, in succeeding seasons.

1925a. Are We Making the Most of Our Banding Stations? Bul. Northeastern B. B. Assoc., vol. 1, pp. 7–10.

A plea for making more detailed observations; several cases are cited in illustration of the point.

1925b. Domestic Affairs of *Spizella p. passerina*. Auk, vol. 42, pp. 136–137.

A pair of these birds mated through two breeding seasons seen together after the nidification duties were over.

1925c. Starting a Banding Station. Bul. Northeastern B. B. Assoc., vol. 1, pp. 25–26.

Instructions for the beginner.

1925d. Miscellaneous Observations at Banding Stations. Bul. Northeastern B. B. Assoc., vol. 1, pp. 26–30.

A general discussion of "flash colors," "obsolete instincts," "ancestral voices," and other features of bird study

1925e. Good and Bad Practice at Banding Stations. Bul. Northeastern B. B. Assoc., vol. 1, pp. 42–45.

A criticism of traps and methods.

1925f. Nuptial Dance of the Purple Finch. Bul. Northeastern B. B. Assoc., vol. 1, p. 51.

An interesting description of this ceremony.

1925g. Polished Bird Bands. Bul. Northeastern B. B. Assoc., vol. 1, p. 52.

The theory is advanced that highly polished bands on female Purple Finches are due to frequent turning of the eggs during incubation.

1925h. Helping the Biologist. Bul. Northeastern B. B. Assoc., vol. 1, pp. 57–58.

Bird banders are continually accumulating data that will be of service in working out various problems.

1925i. Retrospective. Bul. Northeastern B. B. Assoc., vol. 1, pp. 66–67.

The end of the first volume of the Bulletin shows a gratifying cooperation between members and the editors. The editor suggests fields for further investigation.

1925j. A Concentrated Banding Station. Bul. Northeastern B. B. Assoc., vol. 1, pp. 69–70.

An admirable collection of traps and feeders are operated in a small yard.

1925k. Bird Aggregates. Bul. Northeastern B. B. Assoc., vol. 1, p. 73.

References to the paper by W. C. Allee in 'The Condor,' vol. 25, pp. 129–131.

1926a. Regarding Downy Woodpeckers. Bul. Northeastern B. B. Assoc., vol. 2, pp. 14–15.

Some color details of both adult and immature birds, not usually noted in published descriptions.

1926b. Sight Return of Junco Number A6196. Bul. Northeastern B. B. Assoc., vol. 2, pp. 16–17.

The band had been enameled "baby-blue," and was thus identified without trapping.

1926c. Sight Repeats. Bul. Northeastern B. B. Assoc., vol. 2, pp. 37–38.

Made possible by a series of colored enamels used on the bands.

1926d. Value of Repeats. Bul. Northeastern B. B. Assoc., vol. 2, p. 40.

Such records are of importance in the study of migration.

1926e. Revival of Juvenal Habits. Bul. Northeastern B. B. Assoc., vol. 2, pp. 52–53.

Food begging by seemingly adult birds may be a part of the mating process, or the bird may be immature.

1926f. Catbirds and Colored Bands. Bul. Northeastern B. B. Assoc., vol. 2, pp. 56–57.

Of five Catbirds marked with colored bands in 1925 at Cohasset, Massachusetts, three returned to the station in 1926.

1926g. And Now the Devil-Wagon! Bul. Northeastern B. B. Assoc., vol. 2, p. 59.

Great numbers of birds are probably killed in Massachusetts by automobiles.

1926h. On the Nature of the Relationship Existing Among Land Birds During Sustained Aerial Migration. Auk, vol. 43, pp. 493–500.

Suggests that the individual complexion of a migrating flock remains more or less constant, citing data from his banding station as supporting evidence.

1926i. The Bearing of a Knowledge of Nest-Spacing Among Birds on the Work of the Bird Bander. Bul. Northeastern B. B. Assoc., vol. 2, pp. 78–81.

The question is raised as to the exact point intended in a station return, pointing out that territory limitations would prevent young from returning to the place of their birth if their parents (or the male only) were still alive.

1926j. A Four-Compartment Drip Warbler Trap. Bul. Northeastern B. B. Assoc., vol. 2, pp. 82–83.

Chardonneret type.

1926k. A Partial List of Birds Which Have Been Captured as Returns on or Near Their Old Nesting Places. Bul. Northeastern B. B. Assoc., vol. 2, pp. 85–86.

The list contains 36 species.

1927a. The Influence of Groups or Clans as Affecting the Presence of Birds at Banding Stations. Bul. Northeastern B. B. Assoc., vol. 3, pp. 13–17.

The theory is advanced that the group or clan behavior determines the location and range of the entire flock.

1927b. Malformation of a Downy Woodpecker's Bill. Bul. Northeastern B. B. Assoc., vol. 3, pp. 19–20.

Upper mandible much longer than lower. The bird was caught and the excess length removed.

1927c. A Recommendation to Bird-Banders. Bul. Northeastern B. B. Assoc., vol. 3, pp. 44–45.

Suggests the use of colored bands in order that the movements or partial migrations may be determined of small groups (family parties) of Chickadees and Blue Jays.

1927d. Purple Finch and Catbird Returning Ratios. Bul. Northeastern B. B. Assoc., vol. 3, pp. 58–59.

The 1927 returning ratio for Purple Finches at Peterboro, New Hampshire was 58.82 per cent, and for Catbirds at Cohasset, Massachusetts, the ratio was 36.84, in both cases the returns being only for birds banded in 1926.

1927e. Some Additional Bird Weights. Bul. Northeastern B. B. Assoc., vol. 3, pp. 70–71.

Weights for individuals of 14 species are listed in tabular form.

1927f. Some Chickadee History. Bul. Northeastern B. B. Assoc., vol. 3, p. 72.

Notes on the mating of banded Chickadees. The evidence supports a belief that two birds are mated for their second season.

1927g. A Query Regarding Purple Finches. Bul. Northeastern B. B. Assoc., vol. 3, pp. 73–74.

In spite of belief that these birds mate in first winter plumage, observations of the author do not confirm this; nor has he heard the immature give the full song of the adult male.

1927h. A Plea for More Bird-Weighers. Bul. Northeastern B. B. Assoc., vol. 3, p. 75.

The large heavy Song Sparrows may represent a northern race. More data are desired on weights of birds.

1927i. The Yellow Coloration of Downy Woodpeckers. Bul. Northeastern B. B. Assoc., vol. 3, pp. 104–105.

Additional birds are recorded on which there is a decided yellow cast to the white areas.

WHITTLE, CHA[RLE]S L[IVY] AND HELEN GRANGER WHITTLE.

1925. Notes on Plumage Changes of Male American Goldfinches. Bul. Northeastern B. B. Assoc., vol. 1, pp. 45–48.

Detailed observations relative to the progression of the prenuptial moult.

1926a. Some Bird Weights. Bul. Northeastern B. B. Assoc., vol. 2, pp. 33–36.

Series of weights are given for several species. Immature Purple Finches average heavier than adults.

1926b. Return Ratios in Their Relation to Annual Mortality

Among Birds. Bul. Northeastern B. B. Assoc., vol. 2, pp. 48–50.

Returns of Purple Finches at Peterboro, New Hampshire, are in approximate ratio of four adults to one bird of the year.

1927. Plumage Variations and Plumage Changes Among Eastern Purple Finches. Bul. Northeastern B. B. Assoc., vol. 3, pp. 62–68.

A detailed discussion of this subject. See also Magee, 1926a.

WHITTLE, CHA[RLE]S L[IVY], AND LAURENCE B. FLETCHER.

1924. Further Observations on the Group Habit Among Birds. Auk, vol. 41, pp. 327–333.

A detailed statement based upon data from four adjoining stations.

WHITTLE, HELEN GRANGER (MRS. CHARLES LIVY WHITTLE).

1923. The Gentle Sport of Bird Banding. Bul. Massachusetts Aud. Soc., vol. 7, pp. 7–8.

An account of the pleasures of operating a banding station.

1925a. Catbird History. Bul. Northeastern B. B. Assoc., vol. 1, pp. 48–49.

A pair of these birds, mated at Peterboro, New Hampshire, in 1924, returned in 1925, and remated.

1925b. Notes from a Peterboro, N. H., Banding Station. Bul. Northeastern B. B. Assoc., vol. 1, pp. 63–65.

Description of station, traps used, and number of birds banded with returns obtained.

1926a. Bird Parasites. Bul. Northeastern B. B. Assoc., vol. 2, p. 13.

Bird flies found on Purple Finches, Song Sparrows, and Chipping Sparrows.

1926b. Note on Rose-breasted Grosbeaks at Peterboro, New Hampshire. Bul. Northeastern B. B. Assoc., vol. 2, p. 57.

Several return records have been obtained. Males are more frequent visitors than females.

1926c. Recent History of a Pair of White-breasted Nuthatches. Nos. 117455 Male and 117456 Female. Bul. Northeastern B. B. Assoc., vol. 2, pp. 72–74.

A pair remain together for two years. Although the young are brought to the station to be fed, they soon leave (or are driven away from) the locality.

1926d. Water-thrushes at Banding Stations. Bul. Northeastern B. B. Assoc., pp. 88–89.

One repeated frequently, readily entering different types of traps. Cracker crumbs were a favorite food.

WHITTLE, HELEN GRANGER AND CHARLES L[IVY].

1925. Notes on Plumage Changes of Male American Goldfinches. Bul. Northeastern B. B. Assoc., vol. 1, pp. 45–48.

Detailed observations relative to the progression of the prenuptial moult.

1926a. Some Bird Weights. Bul. Northeastern B. B. Assoc., vol. 2, pp. 33–36.

Series of weights are given for several species. Immature Purple Finches average heavier than adults.

1926b. Return Ratios in Their Relation to Annual Mortality Among Birds. Bul. Northeastern B. B. Assoc., vol. 2, pp. 48–50.

Returns of Purple Finches at Peterboro, New Hampshire, are in approximate ratio of four adults to one bird of the year.

1927. Plumage Variations and Plumage Changes Among Eastern Purple Finches. Bul. Northeastern B. B. Assoc., vol. 3, pp. 62–68.

A detailed discussion of this subject. See also Magee, 1926a.

WILSON, GORDON.

1925. Notes Here and There. Wilson Bul., vol. 32, p. 184.

Two short notes, one relating to the banding of Wilson's Phalarope by Clarence S. Jung near Chicago, Illinois, and the other to the banding of 1,227 Purple Finches and 134 Evening Grosbeaks, by M. J. Magee, at Sault Ste. Marie, Michigan.

WILSON, HAROLD C[HARLES].

1926. Work with the Gulls on the Sister Islands in Lake Michigan. Wilson Bul., vol. 33, p. 248.

During 1925, 102 young Herring Gulls were banded, which, with those banded the previous year, makes a grand total of 259. A few returns have been received.

WINTERS, S. R.

1925. Bird Banding. By Means of Scientific Records, the Government is Discovering Some Interesting Facts About Bird Life. Forest and Stream, vol. 95, pp. 78, 127–128.

Popular paper, based on material already published elsewhere.

WOODRUFF, E[DWARD] S[EYMOUR].

1908. Another Capture of a Tagged Duck. Auk, vol. 25, p. 216.

A female Redhead taken at Manahawkin Bay, N. J., on October 25, 1907, carried a band marked "T. J. O. D. 48." Mentions another case, recorded in Forest and Stream, of a duck killed at Beach Haven, N. J., November 1907, with a band marked "T. J. O. D. 49." Bander unknown.

WOODS, HARRY E[ARLE].

1926. A New Host for the Blood-Sucking Larva Fly, *Protocalliphora splendida.* Bul. Northeastern B. B. Assoc., vol. 2, pp. 12–13.

A heavy infestation on young Barn Swallows at Huntington, Massachusetts.

WRIGHT, MABEL OSGOOD.

1922. The Rights and Wrongs of Bird-Trapping. Bird-Lore, vol. 24, pp. 253–255.

Automatic traps must be watched to prevent captured birds from injuring themselves. When so handled, trapping has no bad effects, as one Junco repeated 17 times in one day.

WYMAN, L[UTHER] E[VERET]

1926. A Banded Ferruginous Rough-leg. Condor, vol. 28, p. 98.

A bird killed near Los Angeles, California, October 25, 1925, carried a poultry band numbered 6 (or 9). Bander unknown.

## CHRONOLOGICAL INDEX

1834. Audubon, John J.
1899. Gurney, J. H.
1902. Cole, Leon J.
1903. Cole, Leon J. (2)
1904. Allen, J. A.
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Taverner, P. A.
1906. Taverner, P. A. (2)
1908. Oldys, Henry
Watson, John B.
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1909. Cole, Leon J.
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1912. Allen, J. A.
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Whittle, Helen Granger

## SUBJECT INDEX

The following index includes a few of the more important subjects mentioned in the present literature of bird banding. The number of these might be greatly increased but it is believed that those treated cover the principal studies as revealed by the existing literature.

Headings should be given broad interpretation. For example, under "Traps," are given all methods that have been employed or suggested for the capture of birds for banding purposes and under "Miscellaneous Studies" are included many important investigations that will undoubtedly receive additional attention in the future.

No claim is made that the index is complete, as many papers might be indexed under several subjects, the purpose being merely to provide a key to those studies that seem to have attracted special attention.

*Accidentals:* **Bretsch,** 1926a; **Chapin,** 1926; **Law,** 1924b; **Magee,** 1926a; **Quayle,** 1924; **Wharton,** 1926.

*Associations (Bird Banding):* **Allen, J. A.,** 1911; **Baldwin,** 1923a; **Cleaves,** 1912, 1913, 1914; **Cole,** 1909, 1910b; **Fletcher,** 1923; **Grinnell,** 1910, 1922; **Jones,** 1910, 1912; **Law,** 1925b, 1925d; **Lyon,** 1922b, 1922f, 1923b, 1923c, 1923e, 1925a; **Nichols,** 1923, 1924; **Whittle,** 1922, 1925i.

*Bait:* **Harding, K. C.,** 1926c, 1927c; **Higgins,** 1926c; **McCabe,** 1927; **Merriman,** 1926; **Perkins,** 1926a; **Saunders, F. A.,** 1926; **Taber,** 1926; **Whittle, H. G.,** 1926d.

*Homing Instinct:* **Calder,** 1926a; **Everett,** 1927; **Law,** 1925c; **Pierce,** 1925, 1927; **Sumner,** 1927; **Watson,** 1908, 1915.

*Longevity:* **Baldwin,** 1921a, 1922; **Gillespie, J. A.,** 1927b; **Gurney,** 1899; **Lincoln,** 1927a; **Magee,** 1924, 1926a, 1927b; **May,** 1924a, 1924b; **Musselman,** 1923; **Nichols,** 1925a, 1927b.

*Mating:* **Allen, A. A.,** 1927 (House Wren); **Baldwin,** 1921b (House Wren); 1922 (House Wren); **Boggs,** 1926 (Towhee); **Fletcher,** 1926c (Tree Swallow); **Hamill,** 1926 (Song Sparrow); **Harding, K. C.,** 1926b (Red-breasted Nuthatch); **Higgins,** 1926b (Song Sparrow), 1926d (Phoebe).

*Migration:*[1] **Cole**, 1902, 1903a, 1909; **Crosby and Nichols**, 1927; **Gillespie, J. A.**, 1927a; **Higgins**, 1926a; **Horsey**, 1926a; **Lincoln**, 1922a, 1922b, 1924c, 1926d, 1926e, 1927b; **May**, 1926; **Miner, J.**, 1923; **Oberholser**, 1923; **Smith, W. P.**, 1926, 1927a; **Taverner**, 1920; **Wetmore**, 1923, 1926; **Whittle, C. L.**, 1926h, 1927c.

*Miscellaneous Studies:* **Baldwin and Kendeigh**, 1927 (nesting behavior of House Wren); **Butts**, 1927 (feeding ranges); **Chamberlain**, 1925 (measurements); **Fletcher**, 1924 (group habit); **Gillespie, J. A.**, 1927a ("migrant" and "winter resident" returns); **Harding, K. C.**, 1925 (colonization), 1926c (life history); **Higgins**, 1926a ("group migration"); **Hoffman, E. C.**, 1925 (Blue Jay habits), 1926 (Blue Jay habits); **Horsey**, 1924a (localization of Chickadee), 1926a (migration of the Tree Sparrow); **Law**, 1923b, (repeat records), 1925b (analysis of banding records); **Michener**, 1925 (Purple Finch); **Perine**, 1925 (group habit); **Robinson**, 1927a (incubation); **Smith, W. P.**, 1926 (Tree Sparrow migration); **Stoddard**, 1926b, ranges, organization, sex ratio, and weight of Bobwhite Quail); **Stoner**, 1925a (nesting habits of Bank Swallows), 1926b (mating, nesting, parasites, etc., of Bank Swallows); **Whittle, C. L.**, 1923 (group habit), 1925k ("bird aggregates"), 1926h (migration), 1926i (nest-spacing), 1927a, (influence of groups or clans), 1927e (weights), 1927h (weights) with **H. G. Whittle**, 1926a (weights).

*Mystery Bands:* **Allen, A. F.**, 1920; **Fisher**, 1914; **Herrick**, 1916; **Law**, 1926a; **Lincoln**, 1925a, 1925c, 1926a; **Lloyd**, 1923, 1924a, 1925a, 1925b, 1926a, 1927a, 1927c, 1927d; **Lyon**, 1925d; **Oldys**, 1908; **Stephens**, 1925; **Thayer**, 1911; **Woodruff**, 1908; **Wyman**, 1926.

*Pathology and Parasites:* **Baldwin**, 1924; **Grant**, 1926c; **Harding, Mr. and Mrs. R. B.**, 1926b; **Johnson**, 1925; **Law**, 1925d, 1926b; **Lyon**, 1924b; **Musselman**, 1923; **Nelson**, 1925a; **Perkins**, 1926c; **Rowan**, 1925; **Rowland**, 1925a; **Sprot**, 1925d; **Taber**, 1926; **Whittle, C. L.**, 1927b; **Whittle, H. G.**, 1926a; **Woods**, 1926; **Wright**, 1922.

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[1] Any return record is likely to indicate migration but only those papers are here listed that actually apply the data to a discussion of the subject.

*Plumage:* **Boulton,** 1927; **Calder,** 1926a; **Carter and Howland,** 1923; **Floyd,** 1927a; **Law,** 1925c; **Lyon,** 1926c; **Magee,** 1923, 1924, 1926a, 1926c, 1927a, 1927b; **Middleton,** 1924; **Nichols,** 1925b; **Rowland,** 1925a; **Smith, W. P.,** 1927c; **Whittle, C. L.,** 1926a, 1927i, and with **H. G. Whittle,** 1925, 1927.

*Psychology* (actions of birds in hand, etc.): **Baldwin,** 1924; **Boggs,** 1927; **Carth,** 1925; **Fletcher,** 1925a; **Higgins,** 1925a; **Law,** 1926c; **Lyon,** 1922a, 1922f; **Stoner,** 1922; **Taber,** 1927; **Whittle, C. L.,** 1926e.

*Returns:* **Lincoln,** 1924d, 1927d.[1]

*Traps:* **Allen, G. E.,** 1927; **Calder,** 1926b; **Carter and Howland,** 1923; **Everett,** 1927; **Floyd,** 1925, 1926a, 1926c; **Grant,** 1926b; **Grinnell,** 1925; **Harding, R. B.,** 1925a, 1925b; **Hobart,** 1923, **Hubbard,** 1927c; **Keniston,** 1927a; **Law,** 1923d, 1924b, 1924c, 1925a, 1925c, 1926a; **Lincoln,** 1921b, 1922b, 1922d, 1924b, 1926b, 1926e, 1927c; **Lyon,** 1921, 1922d, 1923d, 1924b, 1925a, 1925b, 1926b; **Magee,** 1923; **McCabe,** 1927; **Michener,** 1926, 1927a; **Musselman,** 1926; **Sprot,** 1924a, 1925b; **Stoddard,** 1925a, 1925b, 1926a; **Thomas,** 1927a, 1927b; **Whittle, C. L.,** 1925e, 1925j, 1926j; **Whittle, H. G.,** 1925b.

[1] Return records appear in a great many papers but as all those received during the period January 1, 1920 to December 31, 1926, are summarized in these two bulletins, it seems unnecessary for present purposes to list other papers.

*U. S. Biological Survey,*
*Washington, D. C.,*
*June 4, 1928.*

# THE AUK

## A Quarterly Journal of Ornithology

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Since its organization in 1883 the American Ornithologists' Union has held one special and 45 annual meetings.

| Meeting | Date | Place | Fellows Present | Total Membership |
|---|---|---|---|---|
| 1 | 1883, Sept. 26–28 | 1st New York | 21 | 23 |
| 2 | 1884, Sept. 30–Oct. 2 | 2d New York | 16 | 143 |
| 3 | 1885, Nov. 17–18 | 3d New York | 16 | 201 |
| 4 | 1886, Nov. 16–18 | 1st Washington | 20 | 251 |
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| 6 | 1888, Nov. 13–15 | 2d Washington | 20 | 298 |
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| 19 | 1901, Nov. 11–14 | 8th New York | 18 | 738 |
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| 20a | 1903, May 15–16 | 1st San Francisco | 7 | — |
| 21 | 1903, Nov. 16–19 | 2d Philadelphia | 19 | 775 |
| 22 | 1904, Nov. 28–Dec. 1 | 5th Cambridge | 17 | 808 |
| 23 | 1905, Nov. 13–16 | 9th New York | 17 | 860 |
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| 25 | 1907, Dec. 9–12 | 3d Philadelphia | 20 | 850 |
| 26 | 1908, Nov. 16–19 | 6th Cambridge | 17 | 888 |
| 27 | 1909, Dec. 6–9 | 10th New York | 19 | 866 |
| 28 | 1910, Nov. 14–17 | 9th Washington | 23 | 897 |
| 29 | 1911, Nov. 13–16 | 4th Philadelphia | 18 | 887 |
| 30 | 1912, Nov. 11–14 | 7th Cambridge | 18 | 929 |
| 31 | 1913, Nov. 10–13 | 11th New York | 28 | 992 |
| 32 | 1914, Apr. 6–9 | 10th Washington | 27 | 1101 |
| 33 | 1915, May 17–20 | 2d San Francisco | 11 | 1156 |
| 34 | 1916, Nov. 13–16 | 5th Philadelphia | 26 | 830 |
| 35 | 1917, Nov. 12–15 | 8th Cambridge | 21 | 891 |
| 36 | 1918, Nov. 11 | 12th New York | 14 | 953 |
| 37 | 1919, Nov. 10–13 | 13th New York | 28 | 1024 |
| 38 | 1920, Nov. 8–11 | 11th Washington | 25 | 1142 |
| 39 | 1921, Nov. 7–10 | 6th Philadelphia | 25 | 1351 |
| 40 | 1922, Oct. 23–26 | 1st Chicago | 24 | 1457 |
| 41 | 1923, Oct. 8–11 | 9th Cambridge | 25 | 1652 |
| 42 | 1924, Nov. 10–13 | 1st Pittsburgh | 26 | 1637 |
| 43 | 1925, Nov. 9–12 | 14th New York | 30 | 1705 |
| 44 | 1926, Oct. 11–14 | 1st Ottawa | 22 | 1815 |
| 45 | 1927, Nov. 14–17 | 12th Washington | 30 | 1752 |

The next Stated Meeting will be held at the Charleston Museum, Charleston, S. C., November 19–22, 1928.